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COTTON

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JANUARY, 1918

Published Monthly by
W. R. C. Smith Publishing Co.
Dalton, and Atlanta, Ga.

Whitinsville Spinning Ring Company

Spinning Ring Specialists

The Best That Experience Can Produce
That Money Can Buy

Whitinsville, Mass.

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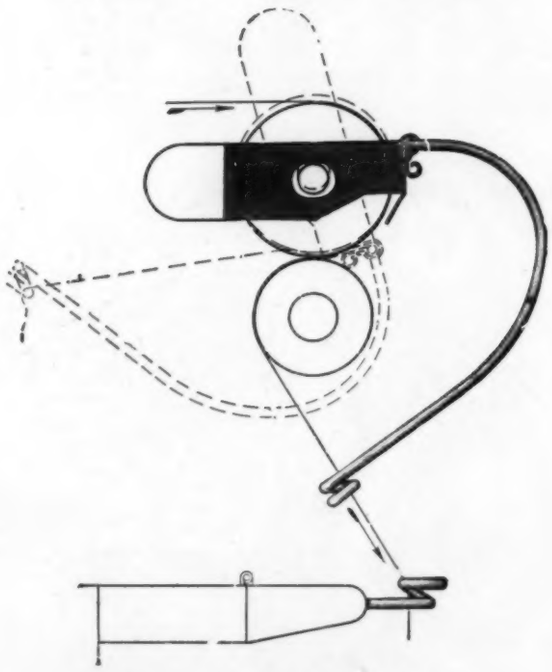
With prices of two-ply yarn soaring



Why not improve the quality of the yarn by using the

Smith Stop Motion

DRAPER CORPORATION

HOPEDALE MASSACHUSETTS

Southern Office
188 South Forsyth Street Atlanta Georgia

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COTTON

Published Monthly by

W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga.

L. L. ARNOLD, Editor.

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When changing address, notify us, not the postmaster. Always give the old address as well as the new one.

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This Issue 5500 Copies.

SALESMEN AND ADVERTISING.

Suppose you hire a salesman to sell collars, looms tractors or bonds, would you pay him a fixed rate on the number of customers he sees every day, or week or month, or would you pay him according to the class of trade he must serve and his ability to meet that particular class?

Suppose your salesmen endeavored in the height of their enthusiasm to call upon the largest possible number of persons each day regardless of whether these persons were prospects or not.

What would be the result?

In the first place, it would be lack of efficiency on the part of the salesmen—they might perhaps interest a few of these persons in your products, if that particular person had use for them. However, your salesmen's efforts would, generally speaking, be like shooting into the air in the hopes that something might get in the way before the shot fell to the ground.

No doubt if your salesmen spent their time in calling on all persons where only one in ten were prospects you would give your salesmen some good sound food for thought which would compel them to seek those who are prospective customers.

But are you as careful with your advertising. Advertising, as you know, should be the advance agent for your salesmen. It should make his introduction much easier.

Do you scatter your advertising promiscuously or place it in the publications which reach the class of readers you want to sell to?

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With the increased volume of national advertising, it is necessary to confine advertising more and more in such mediums that go direct to those you want to reach.

Efficiency should be the keynote in advertising—if you have something to sell to the Southern textile field, you should advertise in a medium that goes direct to the buyers in that field. COTTON goes direct to the buyers of the Southern textile field.

WHAT DO YOU DO WHEN YOU HAVE NOTHING TO DO?

Have you ever thought of the value to you of getting a broad knowledge of your business outside of your daily routine work? Many men have increased their salaries materially and have increased their value to their companies by reading thoroughly the various articles concerning their business in trade publications.

COTTON contains numerous helpful articles each month concerning the textile business. If you have not been using COTTON as your text book to improve yourself in your work, the New Year is a mighty good time to start.

JUST A MOMENT PLEASE.

"Hello!"

"That's great! Thank you."

We just received a telephone message from the Southern Representative of one of our advertisers. He told us he had just landed a contract for about $30,000 worth of his products because of the service which COTTON had given him.

Use Graphite for Cylinder Lubrication and Cut the Cost

Dixon's Flake Graphite forms a wonderfully smooth, anti-friction veneer over the interior of the cylinder.

It furnishes better lubrication than can possibly be obtained by oil alone.

DIXON'S
Ticonderago
Flake Graphite

will restore cut and scored cylinders and valves to perfect smoothness. Sticking and groaning valves disappear entirely. Rod packings last indefinitely.

Write for booklet No. 34C showing some of the types of engines on which Dixon's Flake Graphite is being used and explaining method of successfully introducing it into the cylinder.

Made in JERSEY CITY, N. J., by the
JOSEPH DIXON CRUCIBLE CO.
ESTABLISHED 1827.

DRAWINGS OF YOUR PLANT

This is a Photo of Our Drawing of the Springstein Mills, Chester, S.C.
WE CAN MAKE A PICTURE LIKE THIS FROM THE ARCHITECTS BLUE PRINTS BEFORE PLANT IS ERECTED
RUDOLPH J. SHUTTING CO. CHATTANOOGA TENN.

JORDAN MANUFACTURING CO.,
BOBBIN MAKERS

Home Office and Plant No. 1
MONTICELLO, GEORGIA.

Hardinge "Alert"
Portable Watchman's Clocks

3	station	system	complete	$38.75
6	"	"	"	42.50
9	"	"	"	46.25
12	"	"	"	50.00
16	"	"	"	55.00
24	"	"	"	65.00
32	"	"	"	75.00

Labeled by National Board of Fire Underwriters and approved by Factory Mutuals: Keys do not wear out: Guaranteed unreservedly: Shipped on approval: Prompt shipment: Service that *is* Service.

HARDINGE BROS., Inc. Established 1890
First and oldest Mfrs. of portable watch clocks in America
4176 Berteau Ave. Chicago.

GARLAND

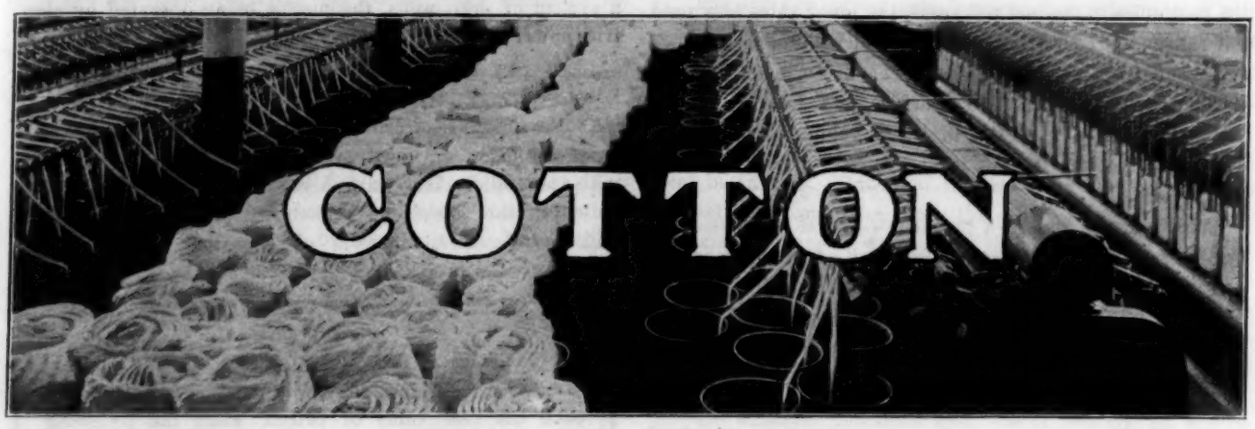
THESE LOOM HARNESSES

Weave Better and Wear Better.

The smooth finish of our loom harnesses causes them to weave well because the friction of the warp is reduced to a minimum, and the softness and pliability of the finish make them wear well because the harness is tough and elastic and not brittle.

G TRADE MARK

GARLAND MFG. CO.
SACO, MAINE



January, Nineteen-Eighteen.

Will You Pay This Usless Tax?

Of the many commissions provided by Congress to study the problems of second-class mail rates, the last and a very distinguished one was composed by Charles E. Hughes, then justice of the Supreme Court of the United States; A. Lawrence Lowell, president of Harvard University; Harry A. Wheeler, president of the Commerce of the City of Chicago.

Dealing with the question of a zone system, this commission spoke as follows (House Document 559, page 140):

"The policy of zone rates was pursued in the earlier history of our post office and has been given up in favor of a uniform rate in view of the larger interests of the nation as a whole.

"It would seem to the commission to be entirely impracticable to attempt to establish a system of zone rates for second-class matter."

The Penrose-Overstreet Joint Commission of Congress on Second Class Matter, in 1906, on page 28 of its report, stated:

"Neither, for reasons almost equally obvious, is a solution to be found in a zone system of charges . . . which would artificially restrict the diffusion of the periodical agencies of intelligence. . . . Would it not be politically and socially unwise to create arbitrary barriers against the processes of national unification and solidarity?

Apart from the social and political considerations, which to our minds are conclusive, there are serious administrative difficulties in the way of a zone system of charges."

Please observe that the Zone System discriminates not only between one citizen and another; it is grossly discriminatory also in that every publisher happening to be located near the sea board of the United States loses a large portion of the low zone rates as compared with publishers that happen to be located in the interior.

The most conclusive proof of the enormous benefit to the Post Office Department itself of the one-cent-a-pound rate on second-class postage is the fact that the post office's income account has over a period of thirty-two years always shown better results when the volume of second-class mail increased rapidly; and has shown results not so good when the volume of second-class mail increased with smaller acceleration.

The post office of the United States has prospered marvelously with a vast and constantly increasing volume of business largely created by the vitalizing growth of second-class mail carried at 1 cent per pound; the post office reported last year, even after losing $45,000,000 on rural free delivery, a beneficent institution of no beneficence to periodical publishers, a profit of more than $5,000,000.

Canada, a country of magnificent distances, carries second-class mail without limitation of haul at one-half cent per pound; her post office habitually shows a profit from operation, and even in her dire need of revenue for this war, greater by far than our present need, Canada has not in her war emergency increased her half-cent-per-pound rate at all.

There have been for so long assertions as to the high cost of giving the post-office service to second-class mail that the favorite figure of 9 cents a pound, bandied about for years, in spite of the findings of the Hughes Commission, has settled in the minds of many congressmen as an established fact.

On May 14, 1917, on the floor of the House of Representatives, Mr. Steenerson of Minnesota reduced these irresponsible cost figures to an absurdity in so far as they may be used to apply to current costs. The only figures of cost of the several classes of mail matter that have been approximately correct are those based on the special weighings and counting of pieces of 1907!

The figures reported by the postmaster general then were, for first-class mail, 50 cents per pound; second-class mail, 9 cents per pound; fourth-class mail, 12 cents per pound; franked mail, 11 cents; penalty mail; 12 cents, and foreign mails, 11 cents per pound.

Apply these figures to the actual weights of the several classes of mail matter carried in the post office in 1916, and it is found that if the cost figures be correct, the department must have spent $590,500,000.

As a matter of fact, it spent only $306,000,000.

This proves that even if these cost figures were correct in 1907 (the Hughes Commission showed that the second-

class cost estimate was too high), the economies effected in the post office in the last ten years, the lower rates now paid the railroads, the work of sorting and making up second-class mail transferred to the publishers, the installation of cheaper freight service for magazines, and the effect on the per pound cost of a greatly increased volume of mail, have cut the 1907 cost, whatever it was, to only a fraction of its former size.

Yet Congress passed a postal law at the last session of Congress increasing postage rates on *all of your* periodicals (second-class mail) from Fifty to Nine Hundred per cent!

Think of this, the Wells, Fargo Express will ship nuts, fruits, and vegetables for 4 cents a pound from New York to California. This new law charges 10 cents a pound on the advertising contents of magazines alone from New York to California readers.

Mr. Reader and Madame Reader—this law will restrict, destroy your opportunity for your trade magazine, your woman's magazine, and your news and literary magazine.

You are expected to pay the Fifty to Nine Hundred per cent increase!

Write to your Congressman briefly urging him to repeal this law!

Do it now!

The Quest for the Golden Fleece.

Thirty-four years ago a company was organized and a cotton mill built at Oakland, California. During that same year efforts were made to grow cotton in the San Joaquin Valley, which, owing to the then existing labor and living conditions, proved a failure. In 1902 a number of experiments at cotton growing were begun by the Department of Agriculture at Calexico, California. In 1906, Ira Aten, a Texan, began to experiment with irrigated cotton in the Imperial Valley and by 1909 a merchantable crop was being produced, the cotton mill at Oakland providing a ready market.

This was the beginning of what promises to be one of the finest cotton growing sections in America. The soil is rich, the growing season long, and the irrigation certain. The staple of this California cotton varies from 1-1/16 to 1-5/16 inches and is of the Upland variety.

The success obtained in the Imperial Valley and a certain similarity of climatic conditions in the Salt River Valley section of Arizona and the cotton growing sections of Egypt, induced the United States Department of Agriculture to experiment with Egyptian cotton growing in America. The result up to the present may be appreciated by reading the article "The Southwest as a Cotton Producer", appearing elsewhere in this issue. The Pima or Sacaton staple is equivalent in length and quality to the best Sakellarides, and the price it commands is going to make it a popular and profitable crop.

An officer of the Goodyear Tire and Rubber Company is quoted as saying that the crop from their 6000 acres of Arizona cotton land this year shows a very high quality and a satisfactory yield. Also they are now working out plans for planting 14000 additional acreas in 1918. The water supply for this irrigation work comes partially from a system of deep wells, the pumps being operated by electric power from the Roosevelt dam.

Just how great a development cotton growing in the Southwest may become only the future can determine, but with the present careful seed selection and scientific cultural methods, continued over a period of years, together with the rapidly increasing acreage of that vast section, it is within the bounds of probability that the near future will see American imports of Egyptian cotton rapidly decrease.

40c COTTON.

Any price below 40c for upland middling is less than the real value of cotton, when the following facts are considered:

First—

This is the third consecutive short crop.

Second—

There is less cotton in the world, in proportion to ordinary needs, than at any time since the Civil War, when cotton sold at One Dollar per pound and upward.

Third—

There is an enormous war and civilian demand for cotton goods.

Fourth—

This demand seems to increase as prices for goods advance.

Fifth—

Cotton goods have advanced every week this season.

Sixth—

Prices of merchandise do not advance except in cases of demand for goods.

Seventh—

Bears' argument of decrease in consumption not supported by above facts and census reports.

Eighth—

Mills are getting on the average over One Dollar per pound for manufactured article, and it does not cost 60 cents to manufacture. (Satisfy yourself about this statement by weighing a list of cotton goods and hosiery at any store.)

Ninth—

If you don't believe cotton goods are in great demand and scarce, try to buy a stock of staple goods for immediate needs.

Tenth—

Many thousands of bales of unspinnable cotton are being counted and in the frost area many thousand more will be counted. The above facts make middling cotton worth forty cents. When you sell for less than that you are making somebody a gift, and this somebody is not the consumer. Never.

An effort is going to be made by shorts to scare you out of your cotton as was done last season. Don't be afraid of government regulation. Our congressmen and senators are still on the job. They know the value of cotton and will see that justice is done the producers. A crop of less than twelve million, not counting linters, can be used at 40 cents.

A Merchant and Planter.

From the Dallas (Texas) News of December 5.

Patriotism or Profiteering?

The advertisement from the Dallas News reprinted on the previous page places our law-makers in a curious position.

Cotton manufacturers are in a quandary.

This statement applies with equal force all over the world.

The manufacturer's need for raw cotton is great; but transportation is difficult, and the planter's monopoly has reached a perfection never before realized. Moreover, a benign government is, even now, through its Bureau of Markets, trying to devise methods whereby the "horny-handed and down-trodden sons of toil" who grow the cotton, may store it in warehouses under government regulation and secure a loan on the warehouse receipts.

It is argued that such a procedure will tend to stabilize the earlier marketing months, when what is known as "distress cotton" is poured into the market-places by the tenant farmers, who must meet their obligations promptly in order to secure "credit" for their supplies during the succeeding year. The motive is worthy and works well in theory. What it will do when actually in practice remains to be determined. If the theoretical tendency to fill up the depressions in the price curve, acts with equal facility in leveling the high places, then manufacturers will indeed have an utopian condition, and cotton buying, from the standpoint of judging the market, will have become a lost art.

However, Theodore H. Price, in *Commerce and Finance* for December 12th, shows conclusively, by comparison with commodity index numbers compiled by Bradstreet's and Dun's in this country, and the London *Statist* and the London *Economist* in England, that while cotton (middling, New Orleans,) has risen 118 per cent during the 16 months ended November 1st, the average advance in the price of everything else, *including cotton goods*, has been only 36 per cent in England and 50 per cent in America. Moreover, according to the Austin, Texas, correspondent of the *Manufacturers Record*, in nearly every town farmers, including tenants, have become cotton buyers, putting up their own crops at the banks as security to cover purchases of cotton grown by other farmers, who desired or were compelled to sell.

If these are the present conditions, what will the future bring forth under the new method especially designed to permit easy borrowing?

Presumably the law of supply and demand will step in occasionally and balance the books; but in those years when consumption approximates production, will the price to the manufacturer be permitted to remain within reasonable bounds; or will the cupidity of the planter and middleman, aided by government guaranteed warehouse receipts, compel prices like those of the present, which are all out of line with other commodity prices?

A recent booklet being sent out by the Connecticut Mills at Danielson, Conn. is entitled "The Village Beautiful" and contains a plea to textile operatives to take their choice of a better home by selecting a mill where a great deal of development work has been done in the way of beautifying the mill village.

Forecasting the Yield and the Price of Cotton.

The average cotton manufacturer and cotton factor will smile at the caption under which this is written. It outlines the daily problem which confronts them from the beginning of one year until the beginning of the next. Their mental attitude toward this subject is well described by the story told of two textile manufacturers who were partners in a deal in futures. One went to New York to look over the market conditions there while the other one stayed at home. After a few days of uncertainty the man at home wired his partner in New York as follows:

"Have heard nothing from you since you arrived at New York. What do you think we had better do?"

The answer came back promptly by wire and is typical of the point we are trying to illustrate. It said:

"Do whatever you think best. Whatever you do will be wrong."

"Forecasting the Yield and the Price of Cotton" is the title of a new book by Henry Ludwell Moore, Professor of Political Economy at Columbia University. In this book, by the use of higher mathematics, he indicates the results which have been obtained in the past on the part of various forecasters. He shows that in seventeen out of twenty cases the forecasts from the weather are more accurate than the forecasts from the condition of the crop by the present official method; he further shows that for all the representative states, the forecasts by the official method from the May condition of the crop are worthless. By contrast, all the forecasts from the May weather have value. The forecasts from the weather for Georgia and South Carolina, at the end of May, were better than the forecasts by the official method at the end of June, and about as good as those at the end of July; while the forecasts from the May weather in Alabama is about as the forecast by the official method at the end of September. On the other hand, the value of the forecast from the May weather in Texas is negligible.

The book brings out many new and interesting features from the standpoint of economic science and economic practice. Those manufacturers who desire to devote some of their long winter evenings to its study and digestion may not only achieve some highly interesting mental acrobatics, but will also acquire a little more confidence in their own personal ability at forecasting.

The book is published by the MacMillian Company, of New York and its price is $2.50.

Most buyers of wrapping papers do not trouble themselves to properly standardize their wrappers by specifying on their orders definite mill brands. This lack of standardization leaves the way open for jobbers, if they wish, to supply under their own label or brand, paper made by different mills, making the private brand of no value to the consumer.

Purchasers of wrapping papers should select a mill that manufactures paper which is suitable in every way for their requirements, then invariably specify this particular mill's brand and insist upon the delivery of that brand against their orders. This policy would not only insure against substitutions but would allow buyers to purchase a standard wrapper on a competitive basis in the open market.

A System of Laboratory Management

BY FREDERIC DANNERTH, PH.D.*

(Copyright 1917.)

Several years ago the author was invited to present at the Kensington Association Institute in Philadelphia a series of lectures on the Industrial Chemistry of the Textile Industry. This course was designed to show the bleacher, the dyer, and finisher of textiles the relation of chemistry to the problems which confront him almost daily. The aim therefore was to constantly point out those lines of work which would prove profitable to textile mills. At the same time the author found that there were certain underlying principles which were applicable alike to any industry. Many textile manufacturers now realize that systematic chemical control of their raw materials, processes and products is an essential part of their business. And they also have found that the success of their sales department is dependent in a considerable measure on the quality of the product. The experience thus gained by the author in his contact with textile mills and manufacturers has been reduced to a systematic plan for a Laboratory Department.

In a recent discussion of industrial chemistry, one of the foremost members of the chemical profession in America said: "A long previous experience in this industry in the United States showed me that the machinery and processes hitherto employed, left very much to be desired in the way of improvement. There had been practically no progress in the industry in the last twenty years, and this condition was due, in all probability, to the mistaken policy of manufacturers in the maintenance of secrecy. As a consequence of this inventors, scientists and manufacturers of machinery are kept ignorant of the necessity for the application of their knowledge and energies in the improvement necessary for the healthy development of any industry."

There are certain persons with whom the bleacher, dyer and finisher should be very frank when troubles arise in a process. Here, as in many other cases the prime question is: how to maintain the quality of the product and avoid financial loss. Specialization in the chemistry of textiles has now made it possible to secure the services of trained men, well qualified to investigate the many difficult problems of the industry. There is at times a strong temptation to underrate the seriousness of a defective process, and the result of this attitude is well known to many of our more conservative mill owners. The progressive manufacturer of today is seeking to accomplish certain ends. In order to insure the best results he must:

1. Purchase the best raw materials for a given purpose at the lowest possible market price.
2. Secure constructive criticism of the manner in which the various products are being manufactured.
3. Secure technical advice from the sales department, for the purpose of learning all details about competing products.
4. Obtain heat, light and power at the lowest possible cost.
5. Protect his processes by secrecy or patent, and avoid unnecessary legal suits for damages in the case of "spoiled goods."
6. Develop new processes in order to produce new and attractive products.
7. Reduce waste to the lowest point consistent with good factory practice.

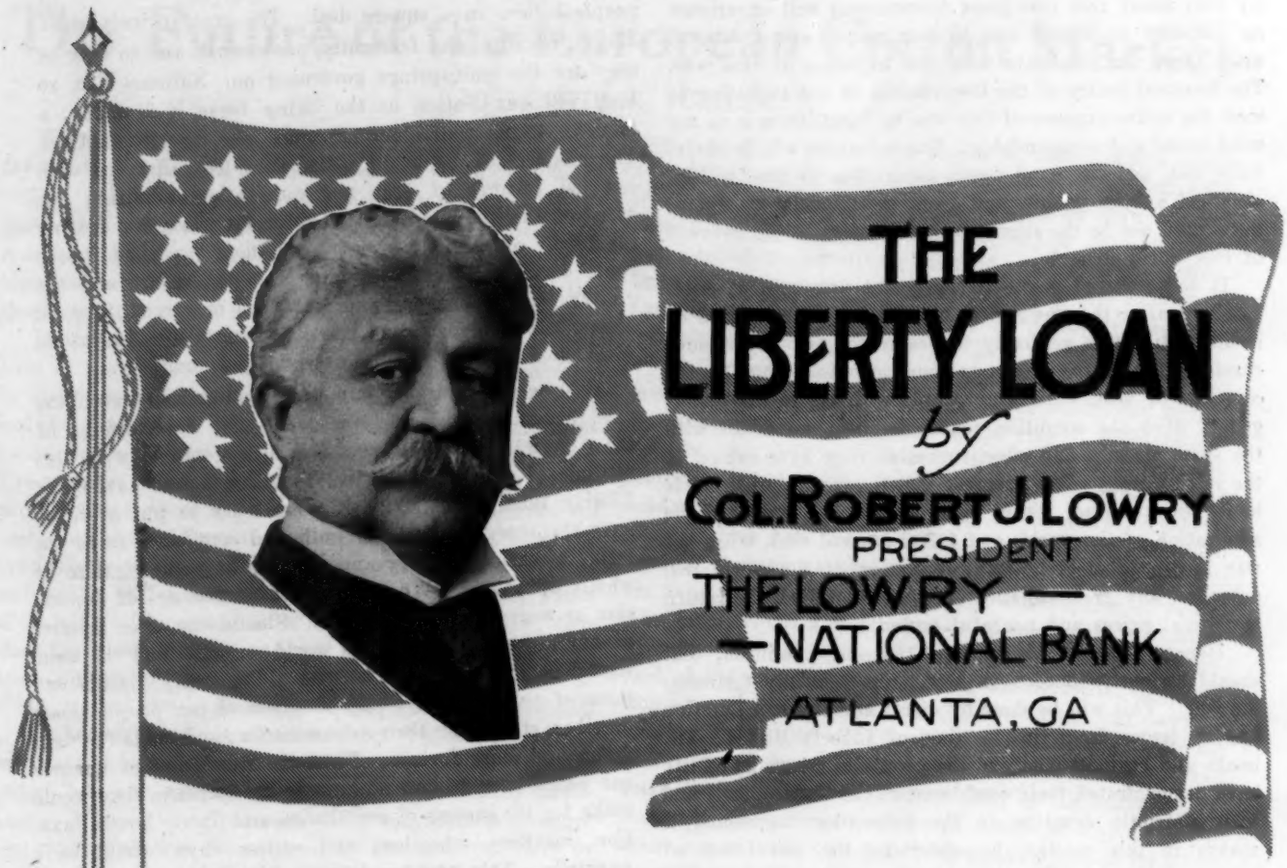
Successful corporations of today have either a written or an oral agreement with the managing director covering these points. Many of our textile manufacturers have risen to an appreciation of the chemist as an indispensable part of a perfect factory organization, and the plan of systematic chemical supervision presented herewith has been devised as a survey of a Laboratory Department to be used in connection with such supervision. This department should be equipped to serve, the departments for,—Purchasing, Manufacturing and Selling, Engineering, Law and Research. Let us consider these in numerical order.

The Purchasing Department.

1. The buyer's chemist must plan for efficient co-operation with the purchasing agent.
2. He must prepare specifications for raw materials.
3. He must see that the specifications are issued in correct form, and submitted to the vendors of raw materials when purchases are about to be made.
4. He should understand the meaning of the terms: *Agreement, Sale, Contract,* and *Breach of contract.*
5. He must know the twelve essential points necessary for drafting specifications.
6. He must understand the relative importance of the *Service Tests* and the *Laboratory Tests.*
7. He must prepare correct forms for recording the results of his chemical analyses, and must be able to interpret them to the purchasing agent.
8. He must prepare correct forms for recording the results of his physical tests, and must understand the details of testing machines.
9. He must prepare forms for recording all important information relating to *materials now in use.*
10. He must prepare forms for recording all important data on *materials offered to the company.*
11. He must know the factors which should govern the purchase of raw materials for his industry.
12. He will prepare a glossary of the terms used in the trade, for designating the several raw materials purchased by the company.
13. He must have a record of the standard methods used for making chemical analyses in his industry.
14. He must have a record of the standard methods and instruments used in making the physical tests in his industry.
15. He must collect and arrange for his department a museum of specimens of all the principal raw materials which the firm purchases or may use at some future time.
16. He must arrange periodic conferences with the purchasing agent, the chief engineer and himself, for the purpose of co-ordinating the work of these three persons.

(Continued on page 209.)

*Consulting Industrial Chemist, Newark, N. J. Sometime member of the Staff of the Pennsylvania Museum and School of Industrial Art in Philadelphia.



EARLY in April, 1917, the Congress of the United States formally declared that a state of war existed between this Government and the Imperial German Government. By this declaration not only was the issue clearly drawn between democracy and autocracy, and the war necessarily prolonged until the triumph of the former will be complete; but the United States undertook the stupendous task of virtually feeding, clothing and financing the world! While such a task is stupendous, and will tax both the resources and resourcefulness of the people, the great American Nation is fully equal to its successful accomplishment and the end to be obtained is worth the fullmeasure of the sacrifice, which its attainment will demand.

The great democratic principle is that all political power must primarily be derived from the people, and to the people each and every public official should be finally accountable. A Government should exist and rule only by consent of the governed, and the time has come in the affairs of men when the duty of this country clearly is to "make the world safe for democracy." It is the mission of this country not only to lead mankind onward and upward, but to teach an object lesson to the world that in the last analysis of Governmental affairs the law of conscience is supreme. Through the columns of a free press and the public utterances of conscientious leaders, we as a free and justice-loving Nation feel that the aims and ambitions of Nations must be measured by the yardstick of right, and subjected in the limelight of conscience and humanitarianism to the crucial test of the Golden Rule.

A monarchy, which only has power in serfdom and war, must account to the American ideal of justice and fair play. Emancipated Nations of the future will bless the name of America as the champion of freedom and liberty, and in view of the example set by this virile Republic of the West before the peoples of the earth, I for one believe that the Republican form of Government will eventually dominate the world. The world has sickened of "kings" and their so-called "divine right;" the world thirsts for freedom, and, when the United States decided to enter this war, its decision was not predicated upon self-interest, but upon the interests of humanity, which tower above all partisan policy or prejudice; and it has answered the call of humanity in the name of freedom and liberty.

As there can be but one result, with which the American people will be satisfied, and that is complete victory over autocracy, and the insuring of a permanent world peace, it is necessary that the people come to a realization of the immense task they have set about to perform. That it will cost thousands of lives and millions of money is beyond question, and these elements of the cost of this war will, I am sure, be accepted and bravely met by our patriotic American people. The two liberty bond issues of 1917 "went over the top" with apparent ease, and this is a strong testimonial of the patriotism of the bankers, who took large blocks of these bond issues, and encouraged their depositors to put their savings and surplus into these bonds; not only urging their purchase as a safe investment, but as a patriotic duty. It is

my firm belief that this great Government will experience no difficulty in having met by our people every demand upon them for money to meet the expenses of this war. The financial policy of the Government in not expecting to meet the entire expense of this war by bond issues is to my mind sound and commendable. The war taxes will be cheerfully met, and the bond issues from time to time will be absorbed by the people, and from the financial viewpoint there need not be the slightest uneasiness as to the outcome of this world struggle.

It has occurred to me at times that the shock of readjustment after the war is over may be the trying period of it all. Still it is probably too early to give any serious consideration to the economic conditions to be met at the cessation of hostilities. Our people will rise to that emergency, when the condition confronts them, no doubt with the same alacrity and effectiveness as they have rallied to the call to arms. The progress that this country has made in its war program within eight months has provoked the admiration of the world, and I feel assured that, when the war is over, this great creditor Nation of the world will not allow any great collapse of values to follow the return to normal prices and peaceful pursuits.

Hence, it seems to me that the only condition, that should seriously concern us now, is successfully financing the war. This will be done by direct and indirect taxation and by issues from time to time of Liberty Bonds. The banks and business men and the people in all walks of life have demonstrated their confidence in the Government, and their patriotic devotion to the principles for which it stands in this conflict, by absorbing the two issues of Liberty Bonds of 1917 without apparent inconvenience. I am led to believe that future issues will be absorbed by the people even more readily, because our people are more alive today to the issues involved in this war than they have been at any time since war was declared. They realize more keenly than heretofore that this country is really and truly to feed, clothe, and finance the world; yes, even more, that we are to fight the battle for the freedom of the peoples of the world from the menace of ambitious greed and ruthless aggression.

It is indeed gratifying to see how rapidly our people are learning the lessons, which war alone can teach them. Food conservation, fuel conservation, thrift, enlimination of waste, the military, mental, and moral training of our young men, the economic value of man, woman, and child power, and the principles of humanitarianism, are some of the many valuable lessons that we, as a Nation, not only should learn, but are learning most rapidly. The Liberty Bond issues alone have taught our people a valuable lesson in thrift. In order that this lesson might be learned, they were issued in small denominations, placed within the reach of the masses of the people, and even sold on small installments, that the masses might own these bonds, and learn the lesson of patriotism along with the lesson of thrift. This is the part of wisdom, for the thrifty citizen is always the patriot.

As the direct result of the broad principles of self-government and liberty, upon which this Nation is founded, it is a pride and inspiration to the world. As long as the eternal principles of liberty and fair play are the motive of our National life, so long will our flag be the symbol of peace and prosperity at home, and power abroad. This Nation has become a living force for good, because its people believe in a square deal. The great principles of liberty, equality, and fraternity, are eternal, and so long as they are the mainsprings governing our National life, so long will our Nation be the living force it is today, a blessing to its individual citizenry, and to all mankind. The subjects of bankrupt monarchies look upon us with mingled feelings of fear and admiration, admiring our spirit of fair play and sympathy for the weak, and fearing the might of millions of men and money enlisted in the cause of right. Notwithstanding the displeasure and the military effort of selfish and ambitious monarchs, they all recognize the financial and martial strength of this Nation, when mobilized in the cause of right and humanity.

Despite the fact that any war is undesirable, even the most ardent pacifist now recognizes the righteousness of the American viewpoint in this struggle. In view of this attitude of our people I feel that, no matter how many Liberty Bond issues it may be necessary to put over, we have the surest ground for unlimited confidence as to the result of each and every appeal. We have the right to be wholly optimistic. We should have no feelings of depression or worry about our future. Should one after another of our allies collapse in this world struggle, and the issue should be sharply drawn between this country's ideals and those of autocracy, it would simply bind our people closer together, strengthen their determination, and make the fight faster and more furious. From the standpoint of finances our people would know no limit to the sacrifices they would make for the success of our armies, and liberty bonds, taxation, meatless, wheatless, and eatless days, would be a bagatelle. This country is not only rich in money and resources, but rich in its citizenry, and autocracy sealed its doom in its willful provocation of a peace-loving people, who, however, are just as dangerous as they are benign.

The world has had demonstrated to its satisfaction the practicability and feasibility of Democratic government. The old monarchies of Europe at first laughed at the experiment, but now its practicability is a solved equation. We have solved it not on a military basis; we have not been preparing for forty years for a wholesale world conquest, and yet within the short space of eight months our Nation has put itself upon a substantial war footing, and we will soon be ready to make an effective drive against the ruthless despoilers of human liberties. There is no military power, holding sway over subjects at the point of bayonet, which is able to withstand the onslaught of outraged and determined humanity in the cause of righteousness and fair play, and the days of the autocrat are numbered. The handwriting has already been seen on the wall.

In the financing of the war in the future the patriotic bankers of the country may be counted upon to do their full share. They have done a most liberal part in the two Liberty Bond issues of 1917, and they have shown their patriotism in other ways. In response to the President's suggestion many of the State Banking Institutions have come into the Federal Reserve System, and have taken their stand by the side of the National Banks of the country to "do their bit" in marshaling the financial resources of the Nation for use in this great struggle. The bankers of the country have always taken a most prominent part in the conduct of wars in the past from the days of the Revolution

(Continued on page 212.)

The Future of the European Cotton Market

BY LUDWIG W. SCHMIDT.

The war has created a very peculiar situation in the cotton market of Europe the full extent of which most likely will be only understood when peace has returned. Much has been heard about the cotton shortage in Germany and Austria-Hungary during the last three years, it is exceedingly difficult, however, to gain an impression of what this shortage really means for the American cotton producer.

How far the depletion of the cotton stocks in the countries of the Central Powers has gone, is best demonstrated by the fact that already, at the end of the last year, steps had been taken to collect every morsel of cotton to be found inside Germany that could be spared by its owner. The number of handkerchiefs, the number of suits, shirts, and other underwear to be in possession of each German has been carefully cut down to a minimum, so as to preserve the available cotton stocks for the army and also to set free such cotton which might be found in the discarded pieces of clothing. The cotton mills have been running half time since the middle of 1915 and now most of them have closed down entirely.

In normal times Germany bought about 1,200,000,000 to 1,400,000,000 pounds of cotton from this country. Only small supplies came from other sources. Not all of this cotton, however, was actually consumed in Germany itself. Austria-Hungary received part of it, and there is evidence also that much was transhipped by German importers to Russian Poland. Allowing for withdrawals of cotton stock from Germany of about 200,000,000 pounds yearly, it appears that Germany annually required about 1,000,000,000 to 1,200,000,000 pounds of raw cotton.

Since the outbreak of the war it has received nothing from cotton growing sources outside of America and from the United States about 147,000,000 pounds. Probably another 600,000,000 pounds came to Germany by way of the neutral countries. This makes a grand total of 747,000,000 pounds against the 3 to 3½ billion pounds it would have received under normal conditions.

Austria-Hungary also was able to get about 50,000,000 pounds of cotton direct, but this can hardly have been of much help, as in normal times it needs considerably more. Germany, therefore, has had to supply the cotton needs of Austria-Hungary. Germany also had to spare sufficient cotton to make the cotton goods needed by Turkey and Bulgaria, both countries having imported in former years cotton goods in considerable quantities. It is therefore, certain that the German consumption of cotton during the first year of the war was large. Allowing even for a reduction in the manufacture of cotton goods, Germany can not have saved anything from the 750,000,000 pounds she was able to import.

It was probably the middle of 1915 before Germany began to realize that it would have to face a complete blockade and also that the war would be carried at least into 1916. When this realization came, steps were taken immediately to preserve the existing stocks of cotton. A special bureau was organized for this purpose and it is certain that from that date little cotton has been wasted in the making of any article which was not of immediate use to the army. Nevertheless it seems that the actual harm was already done, and the stocks of cotton which might have been large enough to carry Germany in the year 1916 if they had been preserved carefully, must have run out around the beginning of that year. After 1915 Germany has received comparatively little, if any, American cotton. Only small quantities of cotton have left this country to nations with contiguous territory to Germany and presumably little of that cotton will have reached Germany.

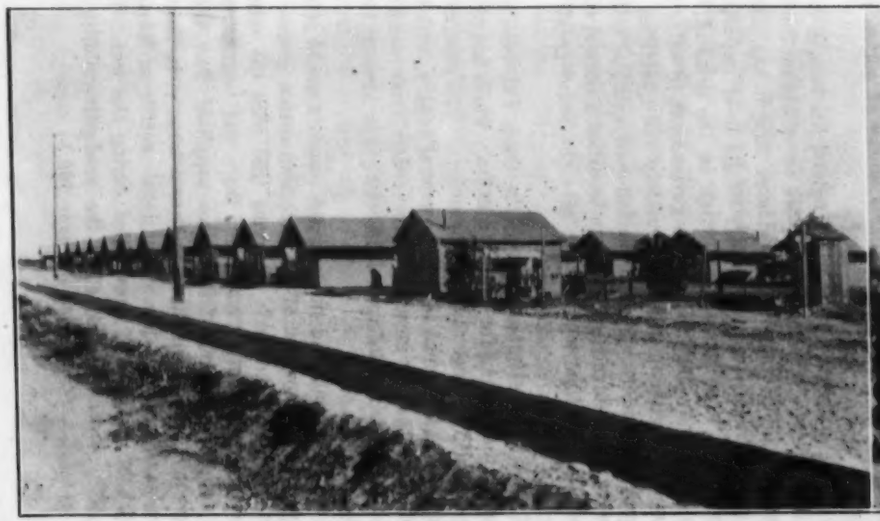
If Germany had continued the manufacture of cotton goods on the same scale as it had done before the war, it would now be short of cotton at the rate of 2,800,000,000 pounds. As already explained, this has not been the case. Germany could no more supply its former large export trade in cotton goods amounting to about $120,000,000 yearly, which may have absorbed roughly about 200,000,000 pounds of cotton, a total saving of 600,000,000 pounds for the three years. Also the industrial consumption of cotton was cut down to a quarter of its pre-war size, making a saving of at least another 2,000,000,000 pounds for the period of the war. This would bring the industrial consumption of cotton in Germany for the time of the war down to about 1,000,000,000 pounds of cotton, which is actually all that it could have had including the stocks carried over from 1913 and the first half of 1914 at the beginning of the war. Therefore the stocks of American cotton in Germany are exhausted to-day. The same applies to its allies. As neither of the countries of the central powers has been a large consumer of Egyptian or other cotton it is doubtful whether either of them has been able to rectify the situation by making use of any still available stocks of cotton not American.

Since the outbreak of the war England has been a very careful buyer of American cotton with an exception during the year 1915, but there is no evidence that it has intentionally starved its cotton industry of its most important raw material. The general reduction in the demand for cotton goods may have helped the government to cover its own supplies without decreasing unduly the quantities to be bought in America. France has followed a similar policy and to-day has returned to what can be called a normal supply which should be sufficient to give the industry all it needs.

Of considerable importance to the trade has been the increase in the demand for cotton from Italy which has practically doubled against the pre-war orders. The remainder of Europe has continued to draw a normal supply, with the exception of the big increase in the orders from some of the neutrals during the year 1915 which has already been mentioned.

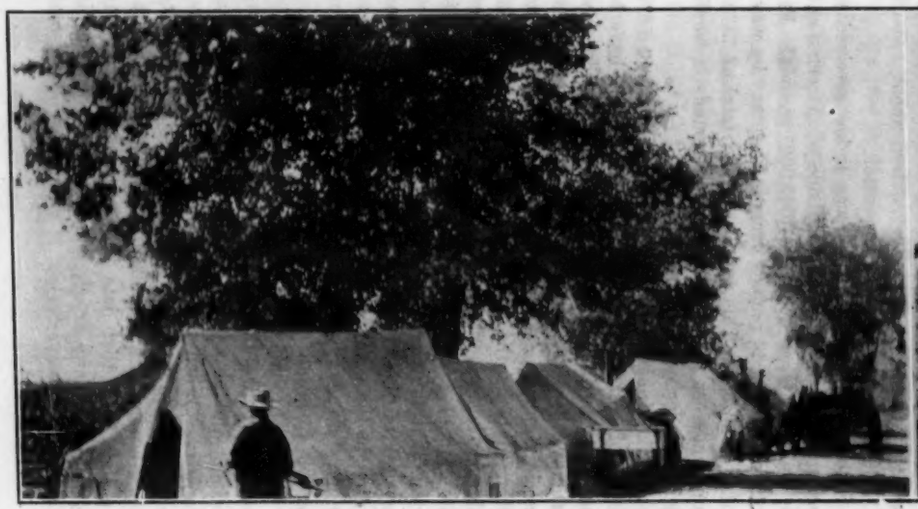
If the war should end suddenly the question would arise: what will be the position of the American cotton grower as to the European market? It seems that with the return of normal manufacuring conditions there will be a certain desire for readjustment of the cotton supplies. The cotton industry of Europe will have to face a large reduction in custom caused by the loss of national wealth in Europe and also by the loss of men killed during the war. The latter, of course, will also effect the productive ability of

(Continued on page 169.)



PERMANENT CAMP FOR MEXICAN LABORERS ON THE RANCH OF THE SOUTHWEST COTTON CO.

COTTON STORED IN THE OPEN AT MESA, ARIZONA.



A PICKER'S CAMP, NEAR CHANDLER, ARIZONA.

A COTTON FIELD, SHOWING THE TOP CROP.

THE SOUTHWEST AS A COTTON PRODUCER

By Eleanor Vore Sickler

TEMPORARY QUARTERS FOR PICKERS ON THE HOLDINGS OF THE SOUTHWEST COTTON CO., NEAR CHANDLER, ARIZONA. THE LONG, BRUSH COVERED, OPEN-SIDED STRUCTURE, SEEN IN THE BACKGROUND, GIVES SHADE, AND THE TENTS OPEN TOWARD IT ON EITHER SIDE.

"The rapidly increasing demand for Egyptian and other superior types of cotton is due to a variety of causes, chief of which are the present enormous needs of the Army, the large proportions obtained by the automobile tire-fabric industry, and the greater attention being given by manufacturers, dealers, and the public generally to the fact that strength and durability of fabric depend very largely upon the quality of the cotton fiber." So says the *Reclamation Record,* in an article prepared for that publication by the United States Department of Agriculture, which is responsible for the development of Pima long staple cotton, now selling at the sensational price of seventy-seven cents per pound, and promising to go higher. (Quoted at eighty cents on November 23d.)

Pima cotton was developed from the old Yuma type of Egyptian cotton by breeders of the Agricultural Station at Sacaton, Arizona, on the Pima Indian Reservation, hence the name. It has a fiber one and eleven-sixteenths inches in length, a textile strength greater than that of any other cotton in the world, and can be converted into fabric with from five to seven per cent less waste.

Yuma cotton is a little behind in length of fiber, being about one and nine-sixteenths inches long. Its yield is somewhat less than that of the Pima, the cost of production is the same, and it has various other agricultural features that make it less desirable.

Durango, a long staple American Upland, is grown on a large portion of the one hundred and twenty thousand acres devoted to cotton in the Imperial Valley of California, and has proven especially well adapted to that locality. Its staple is one and three-sixteenths inches in length, and the variety is an excellent one having an established place in the market and bringing between forty and fifty cents per pound. However, the remarkable uniformity of grade, length and strength of fiber and the higher yield of Pima cotton, and its resultant high price, have won it recognition as the king of so-called Egyptian cottons, and caused it to rank high above other long staple varieties.

With this superiority established, and with a realization that the special cotton requires special and high-priced machinery to handle it, certain questions are bound to arise in the minds of persons interested in the making of cotton textiles.

What are the future prospects of this cotton as to increased production?

Will it be sufficient to maintain a safe supply for an increasing textile trade?

Will the product itself remain uniform?

To answer the last question first, it may be definitely stated that there is every prospect of continued uniformity of grade, since the irrigated lands on which these cottons are grown are isolated and likely to remain free from insect pests, and the growers are rapidly organizing with a view to preserving purity of strain in varieties grown, disseminating scientific cultural methods, classing and marketing.

As to the supply, it is unlikely that Pima cotton will ever suffer through over-production, since it thrives only in regions where it can have at least nine months of growing season, but as all the irrigated valleys of the great Southwest offer this advantage, the possible acreage is large enough to justify that faith in the future of the industry which has prompted hundreds of farmers in these localities to plow up their alfalfa fields to make a place for long staple cotton.

Last spring, in the Salt River Valley of Arizona, about

Illustrations from photos by the author.

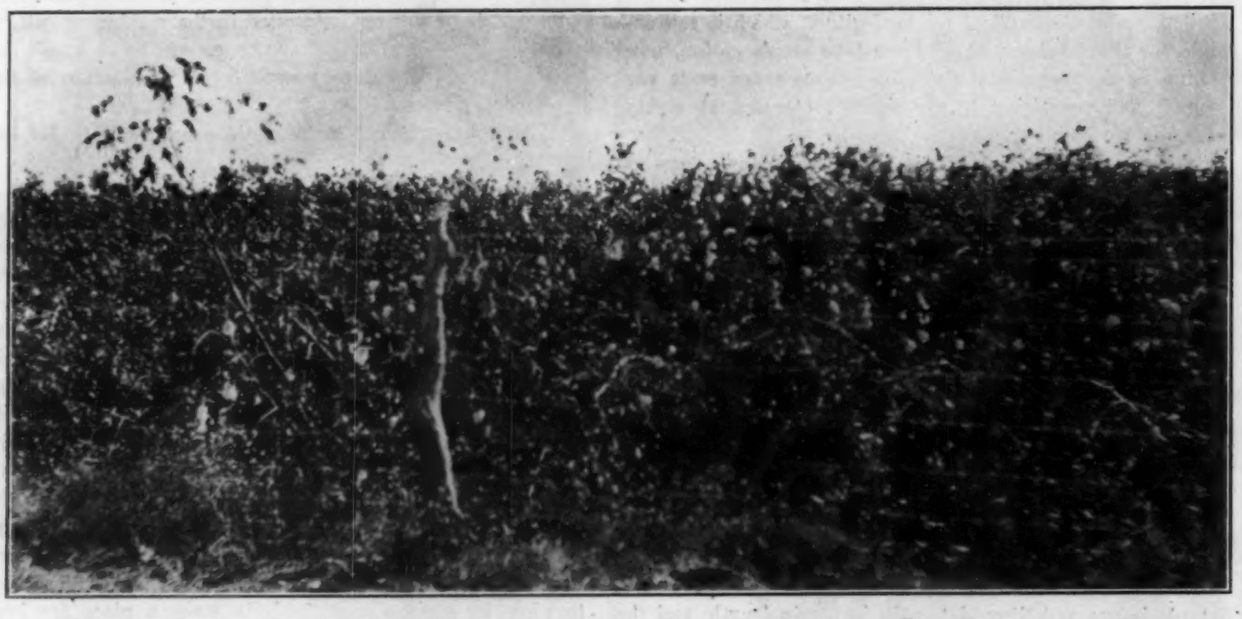
A Cotton Gin and Seed House at Mesa, Arizona.

fifty-five thousand acres were planted to Yuma and Pima cotton. Next year, with abundance of selected seed, Pima will be the only variety planted. The Goodyear Rubber Co., operating under the local name of the Southwest Cotton Co., have obtained in this valley some thirty thousand acres, six thousand of which were planted to cotton this year and the remaining land will probably be planted next spring. The average yield in the valley has been estimated at half a bale to the acre, but especially good soil in expert hands has doubled that amount in numerous instances. The crop, as this is written, is not all in yet, and all estimates are merely tentative, but they range from twelve-thousand to fifteen thousand bales for the Salt River Valley alone.

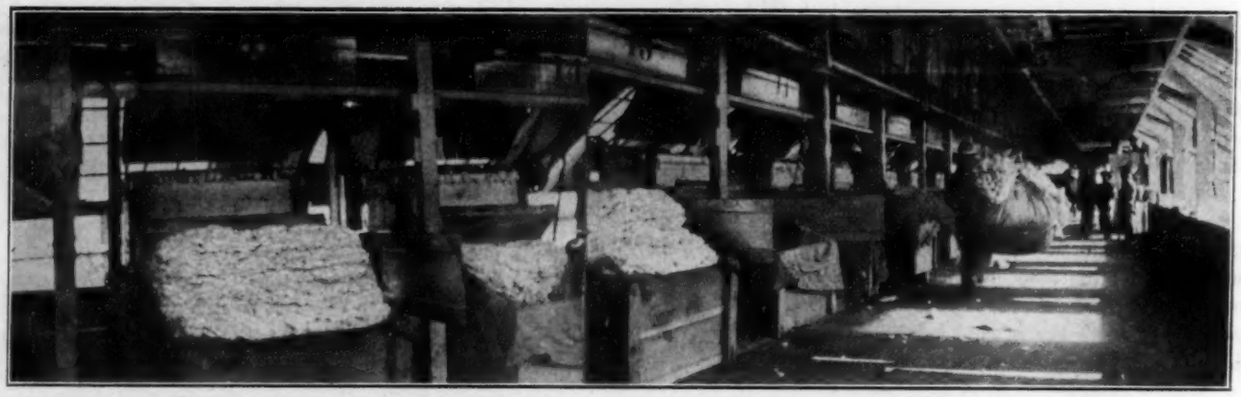
At Parker, Arizona, about three thousand acres have been planted to Pima cotton, and at Yuma there are about the same number of acres in Yuma cotton.

These varieties have so far been most extensively tried out in Arizona, but a large acreage was planted in the north San Joaquin valley of California, near Bakersfield, and a smaller one near Blythe and while this crop got a somewhat late start, the results have been so gratifying as to render it certain that this cotton can be successfully grown in that locality.

The gins used in handling the long staple cottons are of the type known as Platt gins, and were formerly manufactured only in England, but the English patent having expired, they are now manufactured in the United States. The cotton is unloaded from wagons or cars in the usual



A "Close-up" on an Arizona Cotton Field. All Picked But the Top Crop. The Fence in the Foreground Indicates the Height of the Cotton Stalk by Comparison.

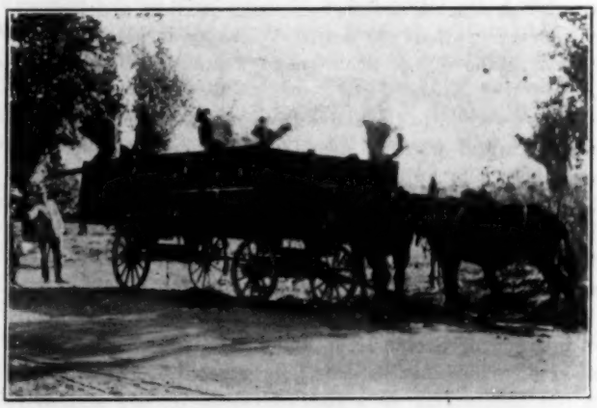


AT THE LEFT, ROLLER GIN NO. 15 SHOWING THE SHEETS OF LINT COTTON COMING FROM THE ROLLERS. AT THE RIGHT, CARRYING THE SHEETS OF COTTON TO THE PRESS. THESE PHOTOS WERE TAKEN AT THE GIN OF THE EGYPTIAN COTTON CO., AT PHOENIX, ARIZONA.

manner by means of air suction, and the gins are electrically operated. They are of the roller and knife variety, the rollers being covered by thick layers of walrus hide. The hide is slashed in such a way as to engage the staple as the roller turns and the cotton is fed in, and the knife is so set as to cut off the seed at the proper moment. The seed is carried off on a conveyor and the cotton is fed into bins from which it is carried to the press in huge bundles. Such a gin handles only a sixth as much cotton in a given time as the saw type gin used for ginning short staple cotton, but it neither cuts nor injures the staple, both points of paramount importance.

The bales produced are of the regular plantation variety and are shipped without recompressing, objection being made, it is stated, on account of the greater difficulty in separating. A type of gin compress is now being investigated that will compress to a greater extent at the first baling and if proven successful may be used here in the future.

Labor problems caused Arizona growers much uneasiness in the beginning of the present season, and the pickers, chiefly Papago, Pima, or Yaqui Indians, and Mexicans, profited thereby. Some growers became panic-stricken during the first weeks of picking and paid as high as four cents



LOADING THE WAGON FROM THE FIELD SACK.

a pound, but the average price has been three cents, and the uneasiness of the earlier part of the season seems to have been unjustified.

HOME OF AN ARIZONA COTTON PLANTER.

Picking is still at its height in this region and will probably continue until the first heavy frost kills the plants. This is likely to occur about the last of November, and if the frost should hold off a little longer the growers will reap a much greater harvest than at present estimated, since there is a heavy top crop now ripening. In the meantime, every road has its procession of wagons going to or from the gins. Saturday is called "Indian Day," for on that day the Indians come in from neighboring reservations with cotton from their own little patches. Those who are well-to-do, come in wagons with the whole family for escort. Others come in on horse-back, but many a sack of high grade Pima cotton rides to gin on its owner's back!

Unstable conditions for some time past, and the high wage rates paid by the mines, have served to discourage any efforts to establish spininng mills in this locality. The nearest is at Oakland, California, and handles only short staple cotton. At present the long-staple cotton raised in the Southwest must all be shipped to the East, and prospects of any change in the future seems to be slight.

The author wishes to acknowledge the courtesy of the officials of the Egyptian Cotton Company at Phoenix, Arizona, who were very considerate and accommodating, and also to thank those others who assisted in securing the facts outlined. Such cooperation made the preparation of the article a real pleasure.

The Triumphant South

BY BERNARD SUTTLER.

When one considers the wonderful progress of our Cotton Belt country since that day 52 years ago when it lay wasted, desolate, crushed, poverty stricken and hungry, with a large part of the flower of its sons in bloody graves the magnitude of the achievement assumes heroic proportions.

When we add to the above statement that for long years outside capital was not over-friendly, and that there has never been any appreciable immigration from the outside then the wonder grows as to how it has all been done.

The explanation is found in three things: the racial stocks and character of the *people*, the *climate*, and the *natural resources*.

Consider briefly *the people*. Originally English, with an infusion of Scotch-Irish, and in sections a little French blood all welded together into homogeneousness by from five to ten generations of a common mode of life and much more common democracy of spirit than they themselves knew.

Underneath this dominant race a huge mass of African blood constituting ideal labor for the farm which was overwhelmingly the industry of the country.

The dominant race had all the bull dog tenacity of the English and Scotch with much of the warm-heartedness of the Irish and French. Conservative in the extreme in many ways, on the other hand they were red-blooded, quick to anger if they thought their rights infringed, hospitable to the core, good friends, honest haters but not vindictive, punctilious on points of honor and chivalrous regarding women, accustomed to taking life easily, prone to letting things drift rather than borrow trouble. Such were the people that the results of the Civil War jostled loose from all their ancient moorings.

Then they woke up and their reserve strength came into play. Ten years of ceaseless struggle enabled them to shake off the incubus of reconstruction but that false move on the part of the dominant party at the north had left these virile people hardened into prejudices of a certain sort which have abided to some extent to the present day.

But those fifteen years of war and civil strife had made them men fit to do anything, and so they came to the rebuilding of their country as fit for the task as their pioneer forefathers, who had subdued a virgin continent inhabited by savage men, were fit for their task.

The second factor in this work of rebuilding was *climate*. A compact country of more than 500 million acres, lying between the 20th and 40th degrees of north latitude, with numerous splendid rivers, great forests, wide acres of level lands, beautiful mountains, and an immense coast line, there is nowhere upon the globe an equal area, in one body, of choice country where climatic conditions are so favorable or health conditions better. With summers not unduly hot, with superb spring and autumn weather, with winters mild enough to permit constant outdoor labor, there is yet enough of the true temperate zone to keep men virile, and permit steady labor without deterioration.

The third factor was *natural resources*. In all the world no equal area is blessed with a greater abundance and variety of natural resources.

Originally purely an agricultural people because of the ease with which a living could be obtained from a generous soil, a new day had dawned and the necessities of the new day taught these people to avail themselves of their natural advantages, and so, slowly at first, they began to turn into other lines than farming. Mountains of granite and marble and iron lay under their hands ready to give up their wealth to those who would dig it out. Abundant fertilizing material lay in the bosom of mother earth and in the beds of the rivers with which to restore the fields wasted by careless tillage. Great numbers of medicinal springs, hot and cold, were ready for exploitation for the benefit of diseased humanity, and the profit of those who would make them known. Millions of horse power were going to waste in the great streams, and crying out to be used for the benefit of humanity. Great treasures of coal abounded in many sections. The immense forests of both pine and hard woods were ready for the axe and saw. Beyond all lay the millions of acres which would produce anything grown in the temperate zone, and many things which pertain to the sub-tropical zone.

The field was great and inviting, while the laborers were comparatively few.

What have these people done with their heritage?

It is hard to resist the temptation to run into statistics, but no further use shall be made of figures than incidentally to show how these people have made good. To-day, with something more than one-fourth of the area of the whole country, the Cotton Belt has one-third of the population. That shows a prolific people who have reared their children.

Everywhere one finds railroad facilities ample for the

needs of the people. The rutty and boggy trails of the past have given way to thousands of miles of good roads, and the people are building good roads with a very fury of impatience.

Beautiful and prosperous villages and towns are found every few miles. Prosperous and growing cities are abundant.

Common schools multiply while colleges, universities and technical schools are yearly increasing largely the number of students and adding to equipment.

In no other section of our country does such a large percentage of the people belong to and attend the churches.

In 70 per cent of the territory the liquor traffic has been outlawed, and is fighting a hopeless battle for its life in the remainder.

All these things show what has been done but as some people are never satisfied without figures, consider the few following:

In 1914, the capital of 50,000 Cotton Belt factories amounted to $2,375,000,000; paid wages of $456,000,000; and turned out products of the value of $2,720,000,000.

From 1855 to 1917 the cotton crop increased from 3,665,000 bales to 13,000,000 bales or 250 per cent, but in the period between 1890 and 1917 Southern cotton mills increased their consumption from 546,000 bales to 4,357,685 bales, an increase of over 700 per cent.

Do you get that and understand what it means?

In 1890 Southern mills consumed 6 per cent of the cotton grown in the South and in 1917 consumed 33 per cent. How long will it take them at this rate to grow to the point where they will make up at home the entire 60 per cent of the *world's* cotton crop which is at present grown in the South?

Again—Consider Cotton Seed Products. In 1899 the value was 42 millions, in 1914 it had increased to 156 millions, or 275 per cent in 15 years.

Take Fertilizers. In 1904 the value was 25 millions, and in 1914 this had become 85 millions, 250 per cent gain in ten years.

Now we get to big figures in percentages. The lumber industry grew 4100 per cent in 57 years, or from $6,000,000 to $250,000,000.

Cotton Spindles jumped from 295,359 in 1860 to 14,500,999 in 1917, or 4800 per cent in those 57 years.

But, enough of figures. Aren't you willing to admit that the South has made good?

One final statement. Our government is training a million soldiers, and in looking over the country for suitable places for training camps, a large majority of them were allotted to the South. That was done not from sentiment but solely on the merits of the case, and was a governmental recognition of the superior climate and healthfulness of the Southern section.

Now it will be understood why this article is headed "The Triumphant South." We have come into "our own."

A unique folder recently issued by the Barrett Company of New York carries a photograph of the huge plant of the National Aniline & Chemical Company, Inc. at Buffalo, New York. All the buildings in this plant are covered with Barrett specification roofs and the folder carries in large type across the page "Guaranteed Until the Year 1937".

The Future of the European Cotton Market.

(Continued from page 163.)

the industry. Estimates have shown that the industrial efficiency of Europe has been reduced by the war at the rate of about 5 per cent. If this has any effect on the demand for raw materials it will mean a corresponding decline in the demand for cotton of about 225,000,000 pounds of American cotton alone, or nearly one twentieth of the total cotton exported by the United States.

Taking into consideration the present day situation of the European cotton industry as affecting the demand for American cotton it appears that the allied countries, immediately after the war, may slightly increase their orders for cotton above those of 1914, but that after the period of industrial reorganization, say about two years after the return of peace, a reduction may take place. Germany on the other hand, will have to get (1) its normal yearly supply of cotton less a certain percentage for reduction in manufacturing capacity; (2) a supply of cotton large enough to make good the supply lost during the time of the war and through the destruction of cotton goods which was caused by the commandeering of such goods in private possession. How large this quantity will be it is not easy to say. As a rule, a country carries a good deal of surplus stock of all kinds of commodities including clothes. The average German will not replenish his number of underwear immediately after the war, but will most likely proceed cautionsly according to his pocketbook. Nevertheless Germany will not continue to live after the war with three handkerchiefs per head of population and a limited number of shirts, socks and stockings. So there must be an increase in the demand for all these goods, and this will also lead to an increase in the demand for cotton above that which has been bought normally. Estimates seem to put the size of this extra quantity at about one year's supply or at least another 1,000,000,000 pounds.

Belgium having been under German occupation and also Poland will require more during the first years after the war than in pre-war times, which also will increase the cotton consumption of Europe during that time.

Taking into consideration all these factors it seems that after the war Europe will need about 5,500,000,000 pounds of American cotton annually for a period of about one or two years which is as much as was sent to Europe during the fiscal year 1912.

Doubtless an increase in the demand will have its effect on cotton prices not only in Europe but also in this country, especially if it should turn out that the years in question will bring only an average or a harvest below normal.

The Draper Corporation of Hopedale, Mass. have recently distributed their yard prizes for 1917 among the tenants of their houses. About $500 was divided in prizes and about 100 awards made. Their experience has shown them that while the prize system has led to a general improvement in the appearance of the premises, that it is really the pride of the tenants in well kept and orderly grounds that is, after all, the strongest incentive in producing the results obtained. In their little magazine, *Cotton Chats*, for November 1917, they reproduce a number of handsome photographs taken in their village and showing some of the houses and grounds. A copy may be obtained upon application to the company.

It is gratifying to note the interest being manifested by the leaders in the educational field in the preparation and use of gardens by their pupils as an out-door adjunct to the nature studies in the class room and laboratories. Some are class gardens, where the children undertake to raise certain vegetables; others contain both wild and domesticated flowers, while still others are devoted to the growing of special plants, shrubs, and even a few trees.

One of the plants that should be more generally studied, particularly in those sections where, by reason of climate conditions it may be successfully grown, is cotton; the plant that clothes the world.

The cotton from which the accompanying illustrations were made was grown in the class gardens of Normal School No. 1, at Washington, D. C., and gathered early in November, 1916. These occupied a patch out-of-doors all to themselves, and were still in full flower at the time of my visit.

Personally, the very sight of cotton revives many scenes and incidents in my mind; for I have viewed the cotton plantations of the South at their best; and in the entire realm of general agriculture there is hardly anything more beautiful than what they represent when "picking time" comes around. Neither is it difficult for me to remember as far back as 1859, and to picture the long rows of cotton bales ranged down the shipping wharves in New Orleans. Then, during the Civil War, while serving as a young officer aboard one of our gunboats in the East Gulf Squadron, I again saw such cotton bales in rows, as they appeared on the decks of the much-coveted "blockade runners," which we were detailed to capture, but which so frequently escaped.

Illustrations from photo's by the Author.

As a naturalist I have the greatest veneration for cotton; for nothing worthy of the name can take its place in the filling of specimen-skins, or in forty other uses in the calling; and it requires but a single whiff of either to recall the part it played in my surgical practice many years ago. Such uses, however, important as they are, are almost trivial as compared with the enormous output of this staple product for other purposes. Unnumbered tons of it are annually used in the manufacture of wearing apparel and other fabrics of every description, in all civilized quarters of the globe.

What has been written and published about cotton, were it possible to bring it together, would form a library of an almost unbelievable size, to say not a word about the literature on the machinery that has been invented to make all manner of uses of cotton. It makes an endless row of books, pamphlets, and articles.

'Tis none of this, however, that is to be touched upon here; it comes a bit nearer the mark when it is pointed out that the generic name for all the different kinds of cotton plants known to us is *Gossypium*, and that these genera are grouped in the natural order *Malvaceae*. Cotton is

cultivated in one great belt around the world, a belt that extends north and south of the Equator for a distance, either way, of thirty-six degrees of latitude. In this vast area occur all the known species of this shrubby, perennial plant, which some, on account of its treatment, are inclined to regard as an annual.

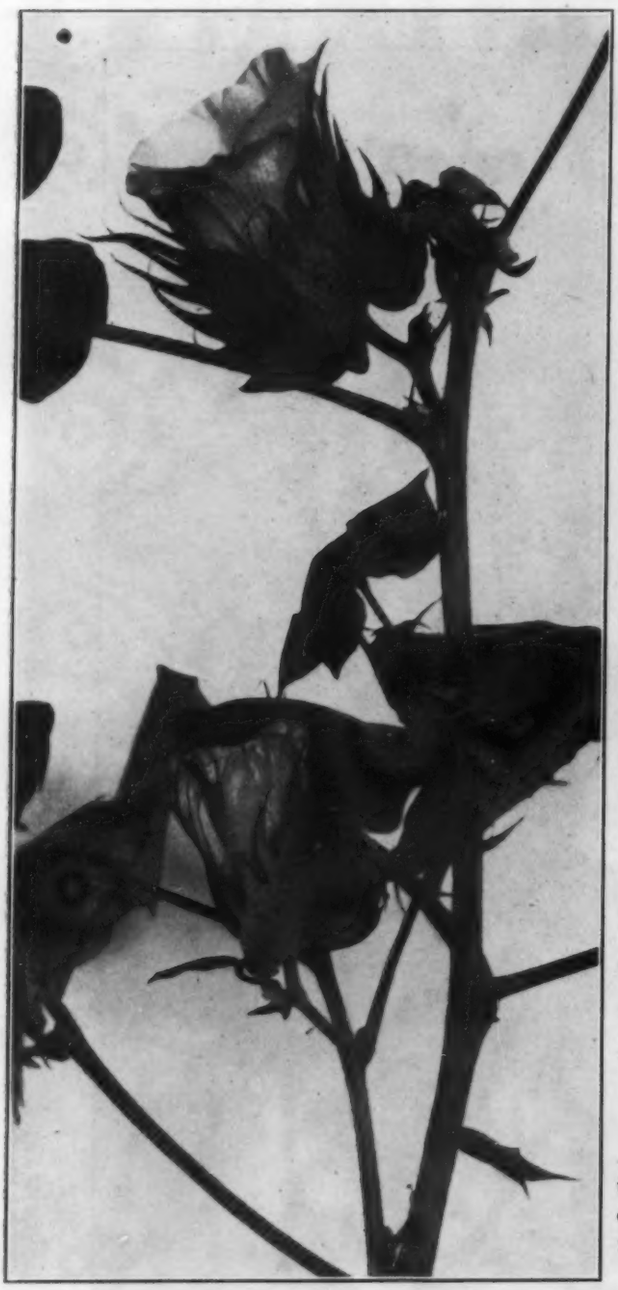
It will be observed from the illustrations to the present article that the leaves of the cotton shrub are three to five-lobed and pointed, being borne upon rather lengthy stalks. Its large and conspicuous flowers are bright yellow, though they frequently become reddish on the second or third day they are out. In all the known species, as well as in the numerous hybrids that have been bred, the leaves are very dark green; while in one species of the East (*Gossypium arboreum*), the flowers are invariably reddish purple in color. This purple-blossomed cotton-tree is held sacred by the Hindoos, and is cultivated in India about the temples, its silky cotton being used to manufacture the tripartite thread, which is the sacerdotal emblem of the Brahman Trinity. Cotton growers of the Orient have many times endeavored to introduce this unique form into commerce,—either directly or through hybridization; but failure has always attended these attempts.

The fantastic and unusually large calyx of the cotton flower is well shown in the accompanying cuts. At various stages of its growth, the capsule is also shown; this capsule contains the future cotton and its seeds. One of these I bisected longitudinally, in order to show how the future

THIS ILLUSTRATION GIVES THE FORM OF THE TYPICAL COTTON LEAVES, AND A SMALL CAPSULE WITH FLARING CALAYX. A LARGE CAPSULE HAS BEEN LONGITUDINALLY BISECTED, IN ORDER TO SHOW THE GREEN COTTON AND UNRIPE SEEDS WITHIN.

cotton is packed away within it. With time, this capsule grows, becomes dark-colored, and, finally splitting open through the lines of its three, or perhaps five-celled divisions, the snowy cotton protrudes, enlarges, dries, when it is ready for the picking.

In nature, the cotton was intended to act as a carrier for the rather large and numerous seeds of the plant which it contains. Man avails himself of both, gathering in the fleecy lint for its thousand-and-one uses. After removing



TYPICAL COTTON BLOSSOMS, THE UPPER IN FULL FLOWER, THE LOWER ONE STARTING TO FADE. NOTE THE FANTASTIC FORM OF THE CALYX.

this, the seeds are shipped to factories, where, by using special machinery they yield cotton-seed oil which in due course is put upon the market. Cotton-seed oil is used as a substitute for olive oil, or to adulterate the latter, as best suits the demand. When pure and refined it is of a bright yellow color, rather bland to the taste, and of a nutty flavor. It somewhat resembles olive oil, and it is better than some of the poorer grades of the latter. After the oil has been extracted from the seeds, the residue, known as cotton-cake, constitutes an excellent food for cattle, and it is also quite extensively used as a fertilizer. This is not all, however, that the cotton plant yields us, for the bark of the root is used effectively in medicine as a substitute for ergot; but with this drug I have had no experience.

Isaac Watts, one of Great Britain's authorities on cotton, says: "The plants which supply the raw material for one of our greatest industries, and for the clothing of all nations, may claim to be ranked amongst the most valuable of nature's productions. The genus has occasioned no small degree of perplexity to the botanists, and the genealogy of the different varieties is still involved in much uncertainty. Linnæus admitted five species of *Gossypium*, an estimate which by some subsequent botanist has been more than quadrupled. The investigation of Professor Parlatore, who, in a handsome folio with colored plates, described the cot-

YELLOW BLOSSOMS OF THE COTTON SHRUB. IN THE LOWER RIGHT HAND CORNER IS A GREEN CAPSULE OR BOLL, PARTLY COVERED BY THE PERSISTENT CALYX. NATURAL SIZE.

tons which he had seen cultivated in Italy, led him to the conclusion that there were seven species of cotton only, the rest being merely varieties."

As in the case of all plants and natural products of supreme importance to man, the describers of the supposed different species of cotton shrubs have published lists of species, a very large proportion of which have no existence in reality. Much of this confusion is due to the fact that the various species of cotton take so readily to hybridization. Among the standard works of a few years ago, "The Culture of Cotton in India" by Doctor Royle was one of the most reliable, and it still remains a high authority on the subject. The botanical part of it is especially fine.

In order to make this brief article as complete as possible, I am sure the reader will pardon me for returning to the matter of the different kinds of cotton known to us, as tabulated by Professor Parlatore; he arranged them as follows:

"1. *Gossypium arboreum,* Linn., found in Ceylon, the Moluccas, Arabia, Senegal, etc.
2. *G. herbaceum,* Linn., growing in Siam, China, India, Italy, etc.
3. *G. sandwichense,* Parl., indigenous to the Sandwich Islands.
4. *G. hirsutum,* Linn., including Siamese, Bourbon, Upland Georgia, and Louisana cottons.
5. *G. barbadense,* Linn., comprising Sea Island and Barbados cotton, with long staple.
6. *G. tahitense,* cottons from the Society Islands, Tahiti, etc., in the Pacific.
7. *G. religiosum,* Linn., including Peruvian and other cottons, principally with seeds in adherent files."

There are no finer cottons than those found in the Western Hemisphere, and I refer especially to the New Orleans or Uplands, and the Sea Island cottons.

Cotton men, or those dealing directly in the cotton trade, frequently speak of the raw material as "the staple". There is no finer cotton known, with respect to its staple, than the Sea Island cotton. These Sea Islands, about which we hear so much when we come to look into the history of cotton, or converse with cotton traders, consist of a group of low-lying islands, off the coast of Georgia. All the conditions there are of a kind especially favorable to the requirements of the cotton plant. At all times of the year the climate is mild, humid, with a temperature almost invariably above 32 degrees F. No cotton staple in the world can beat it, though the "Boweds" or the kind of cotton now raised on the Uplands of Georgia may be considered a close second,—indeed this latter cotton has an exquisitely beautiful staple. In the market this variety is generally known as the "Georgia Uplands," and many years ago some of it was successfully introduced, together with the Sea Island cotton, into Egypt, Queensland, Tahiti, and the Fiji Islands.

Abroad, that is in European and British markets, what are known as "American cottons" consist of the "Boweds," and another staple distinguished as the "New Orleans cotton." What is known as the New Orleans cotton is probably of Mexican orgin, and there are at least two varieties of it, which may be distinguished by the difference in the character of their seeds.

In years past, some very important as well as beautiful experimentation was done by experts of the highest class, in the matter of cross-fertilizing the various species of cotton plants, with the view of obtaining hybrids of superior quality. Col. Trevor Clarke was particularly active along such lines of research, but, so far as I am aware, his results have not as yet appeared in print.

The present conflict in Europe militates against the cotton trade in this country, and doubtless does not make especially for any experimental work, having in view the improvement of the cotton plant as it now exists in many parts of the world, or the systematic study of cotton hybrids. Speaking of the European war and its effect on the cotton trade, I may point to the fact that Prof. James A. B. Scherer has recently given us a very useful little volume on this subject. In it he says, among other pertinent things, that "The great war has brought home to the public mind, as nothing else could have done, the knowledge that this vegetable fleece is really golden, and that its golden values are so interwoven with the solidarity of man as to depend to a peculiar degree for their stability on the maintenance of an unbroken network of international trade." Indeed, if one thing more than another has proved to the world the part—the stupendous part—that cotton plays in the world's commerce, it is this very uprising, this ghastly conflict, still raging as these lines are penned, in the Eastern Hemisphere.

Trade in cotton may be traced to the earliest times in India, and cotton orginally came from that country, from whence the knowledge of its unrivaled value spread to Rome and to Greece. When the Renaissance dawned on Europe, Venice and Genoa became the cotton markets of the world through their trade with India. From that time, down to the present day, the part played by cotton in the world's commerce has ever been more and more clearly realized. As a by-product it is indispensable in a score or more of the arts and crafts; in fact, its range of uses is simply enormous. Were all the cotton in the world, or what is composed of cotton, suddenly removed, what a collapse there would be! From pole to pole, most people would be almost entirely without raiment; fabrics of every description would disappears; most of the arts and crafts would be sent backwards to the days of the stone age; a large part of the munitions and equipment of modern warfare would instantly disappear, and there would be a thousand-and-one revolutions along other lines. The great war now raging in Europe could not last a day longer—in fact, it would come to an end almost instantly. Few there are who in any way realize what a factor cotton is in man's existence, and in his progress as the world's dominant animal. Cotton, or the uses to which cotton has been put, is to a very large degree responsible for the high place man has attained in the struggle for superiority over the other forms of life constituting the world's fauna. No fabric or other vegetable product that we can conceive of could have taken its place—surely not silk, or hemp, and the like.

Marked attention has for many years been paid to the seeds of the various species and varieties of cotton, and it is quite remarkable how they differ in many respects. For example, the American cottons are arrayed in two great divisions, based, to a large degree, upon the morphology of their seeds. These are the *black-seeded* or Barbadensian cottons (see No. 5 in the foregoing list), and the Hairy cottons or the Hirsute species. In the former, the blossoms are yellow, with a purplish or reddish dot at the base of each petal, and in the latter, the blossoms are either white or pinkish. These two varieties cannot always be distinguished with certainty, for the reason that the seeds and blossoms in either of them are subject to very considerable variance.

In some of the South American (Venezuela) and West Indian cottons the seeds are *green.* A Brazilian variety is known as "Kidney cotton," and in it the seeds have a peculiar arrangement in the seed capsule, upwards of ten of them being arranged in the form of a kidney. Other seeds are *naked,* having no hirsute growth upon them as we find in the seeds of other kinds. Old as cotton is, we still have something to learn about it, to say nothing of some of the insect pests that, in certain sections in this country, almost threaten its very existence.

Cotton Goods in Nineteen-Seventeen

Middling upland cotton, New York spots, reached 31¼ cents a pound on November 26, 1917, the low point of the year having been on February 2, when a level of 14.30 cents was touched. This remarkable spread in the price movement was reflected in cloth prices and was accompanied by the largest sales and the largest production ever known in the history of the American business. Extraordinary incidents became common throughout the trade, and were as astonishing in mercantile channels as in manufacturing centers. Cotton came into its own as a prime necessity of war plans, and it is now recognized by the American people as the one raw manufactured staple of clothing they control.

A statistical summary of cotton goods prices between December 15, 1916, and December 15, 1917, will afford manufacturers a grasp of what a twelve-month brought forth.

Yards per lb.	Width.	Construction.	Price, 1916.	Price, 1917.
7.60	27 in.	64 x 60	5½c	8½c
9	27	56 x 52	5	7⅝
6.25	38½	60 x 48	7	10¼
5.35	38½	64 x 60	7¾	11¾
4.75	39	68 x 72	8⅝	13½
4.25	39	72 x 76	9⅝	15¼
4	39	80 x 80	10⅜	16
5	39	80 x 88	11¼	15
4	36	48 x 48	9¼	14½
5	31	48 x 48	8	11½
5.50	36	48 x 40	7	10⅞
9	40	76 x 72	10¼	11¼
8.50	40	88 x 80	12	13
7	40	96 x 100	14¾	16
11.35	30	88 x 80	9½	10¾

The figures indicate the movement in prices on print cloths, sheetings, and combed yarn goods in the gray for converting. The list price of cotton duck had been advanced 20 per cent in November of 1916, and by July, 1917, costs had advanced so rapidly that an advance of 100 per cent was made when a new list was issued. In January of 1917 a standard flannellette had been sold in a large way at 9 cents a yard for delivery up to September. In December the same cloth sold at 17½ cents. A staple gingham had advanced to 17½ cents a yard, and a standard print to 13 cents. The spread in price from the low to the high on a 4-yard sheeting was 72 per cent, on a wide 64 x 60 print cloth, 84 per cent, a percale, 66⅔ per cent, and a combed yarn fabric hardly 20 per cent. An Eastern 9 ounce denim sold at 50 cents a yard, and a southern 2.20 indigo denim at 32½ cents. A wide sheeting that was priced at 35 cents for 10-4 goods a year ago was sold ahead for four months at 55 cents a yard when 1917 closed.

The rise in value on many goods was almost uninterrupted and it follows that a great deal of money was made by manufacturers and merchants. At each step upward in the dizzy climb, sellers became more conservative, yet the buying went on with more regularity than had been seen in normal periods of relatively low values.

Apprehension of war took hold of people soon after the turn of the year. The note of peace sounded in the German Reichstag in early December, 1916 was forgotten by February 1, when an unrestricted submarine warfare was insolently announced from the same source. There was a temporary business shiver in the cotton world, but from that time forward values began stiffening, and until crop uncertainties misled the trade into thinking that an 18 cent price would be acceptable on cotton when wheat was selling at over $2 a bushel, the trend was firmly upward. There was a period around the first week in September when traders seemed to lose their bearings, and cotton went down to around 21 cents. But soon thereafter, both cotton and goods began to appreciate and there followed in October and November the most remarkable cotton goods buying movement this country ever saw.

Following the plans of the Council of National Defense, a committee on cotton goods was formed among New York merchants representing the industry, to advise and assist in the purchase of cotton goods for war purposes. Although this committee went out of business by December 1, it had participated in purchases aggregating $300,000,000 in value. In addition to this vast expenditure, other purchases were made on account of contracts entered into with the government indirectly, and by the end of the year it was estimated that not less than $500,000,000 worth of cotton goods merchandise had been bought or engaged on account of war. Based on values in normal times this would represent five-sevenths of the total output of the industry. Careful merchants are convinced that not less than 35 per cent of the country's cotton goods output is already headed toward war purposes and within another month or two this is expected to be increased greatly, as it is proposed to double the size of the armies wanted.

The story of how the cotton goods trade has been adjusting itself to war conditions on a scale not dreamed of in peace times is far too voluminous and varied to be taken up here. Suffice it to say that instead of cotton duck being the only product affected by the war, as happened during the troubles with Spain, almost every division of the trade was called upon or will be called upon to take a part in the production of war's essentials, either on the firing line or behind it.

The largest cotton blanket mills are already engaged on merchandise for the government, the Red Cross, or some other direct or indirect source of war orders, up to the extent of 50 per cent of the fullest possible output. The largest gingham mill in the country has turned over fully 35 per cent of its machinery for war goods, such as uniform twills, cotton khaki shirtings, medical supplies of all kinds, and napped cottons. Some mills in the South making coarse goods are engaged on cloths that have been bought in quantities larger than were ever recorded before.

In November the government issued instructions that no cotton duck heavier than No. 10 should be sold by manufacturers without the consent of the Priorities Board, and a little later on, price agreements began to be the usual thing between purchasing boards and mills. Earlier in the year the government began to approve orders with mills, based upon cotton prices quoted on the future boards, and

probable wage advances that might occur during the life of the contract. Inspectors were placed in many factories to see that 100 per cent efficiency was maintained throughout the mill in the matter of delivery of government orders accepted. The demand for duck became so great that contracts for its manufacture were placed with carpet mills, worsted mills, cotton quilt mills, and with upholstery mills. As the pressure grew, many mills engaged in producing duck for the automobile trade were virtually taken over for government uses and auto contracts were discontinued.

The government and Red Cross agencies bought over 150,000,000 yards of bandage cloths in Fall River and apportioned the business so that every mill capable of producing them took a share. Finishing plants were commandeered in whole or part for the dyeing of khaki twills and other materials. A vast yardage of wide print cloths, possibly 7 per cent of the total output, went into use for waterproof coverings for soldiers and sailors. Special cloths were ordered for gas masks, for aeronautic machines of many kinds, for feed bags, for accoutrements, beltings, and a hundred new uses in war. Medical and hospital supplies were ordered in great quantities, including sheets, pillow cases, mattresses and covers, nurses' uniforms, night robes, pajamas, instrument cases, etc. With every duck mill in the country employed to its fullest capacity, there was still a scarcity of many heavy materials, especially those required for tarpaulins, and ammunition covers of all kinds. From time to time many new fabrics were constructed and adopted for special purposes.

In order to meet the needs of many weavers who could not supply the yarns wanted for the cloths they could produce, the demand for sale yarns began to expand very fast, especially toward the end of the year when duck yarns were sought in large volume. Coming at a time when large orders were being placed by knitters who had taken contracts for underwear and hosiery, the rise in yarns was rapid and business broadened into unexpected volume.

These things indicate the influence that the government buying had upon the market, especially after the drafting of the armies got underway, the Liberty Loans were floated, and the people of the country finally began to settle down to the real part production behind the lines must play in this war. Other influences had been at work silently for some time and had brought about a scarcity of goods in first hands that was very unusual, and also greatly misled many jobbers catering to the civilian trade.

One of these was the sustained export trade. The entrance of this country into the war did not have the effect expected on foreign trade. Instead of contracting it suddenly, the figures issued up to September 1 showed that exports were holding their own with last year in yardage as well as in value. The decline in wearing apparel shipments, due to the contraction in the supply of knit goods and other made up goods available for foreign markets, was more than offset by the yardage of cloths shipped and the values placed on them. The stricter regulation of trade which followed the enactment of legislation in the Trading with the Enemy Act, culminated in December in the issuing of a blacklist and the requisition of licenses issued by the government for all shipments out of the country. A restriction of imports was ordered about the same time.

Another important factor was that burlap users were unable through exchange and shipping difficulties due to war time, to secure from India or Dundee, their usual supplies. The consequence was that a still larger use of cotton goods substitutes became necessary. Millions upon millions of yards of coarse heavy cotton goods were purchased to replace burlaps, some of the contracts already on the books extending well toward the end of the current cotton year. Osnaburgs, single filling duck, coarse sheetings of many constructions, and drills, were bought.

The curtailed supply of linens and wool goods, and the use of many forms of cotton goods as substitutes, continued throughout 1917 as one of the steady influences in broadening the demand. Cotton towels, damasks, cotton worsteds, cotton warp wool goods of all kinds, came into large use and added to the drain upon the facilities of mills everywhere. Many of the coarser yarn Southern products, such as suitings, cheviots, plaids, coverts, and similar merchandise were in full demand and are now under order for at least six months ahead. As the pressure for wool goods grows greater for use in the armies and navy, and the need of conserving the wool supply becomes recognized, the new uses for cotton goods will continue to multiply.

The demand that has been referred to thus far came from the government and export sources largely and was felt directly at the mills and in selling and distributing agencies. Another sort of demand was seen in the heavy call for goods among consumers, due in part to individual purchases for soldiers' or for relief organization needs, and in another part to the sustained prosperity in agricultural and industrial centers. It was not until late in the year that keen merchants began to see that real economy in the use of fabrics was occurring in consuming channels. This development came none too soon, for had the ordinary holiday demands been seen at the retail counters it could not have been met without such a flurry as that seen in primary markets when the great fall demands came to light.

When spring lines of goods for 1918 were opened in July of 1917, it was seen that agents were not offering as many styles and patterns as in normal years. Fancies were cut out and the offerings consisted largely of staples and semi-fancies. The exploitation of styles and fashion in fabrics was minimized, and attention was given to the offering of the most serviceable goods known in the American trade. An enormous demand for ginghams of all kinds began to develop and it was not many weeks before the gingham mills of the country were completely sold ahead for the spring season.

All previous records of sales were eclipsed. Cloth that had been bought very moderately for the fall season of 1917 at 9 cents and 10½ cents, was sold for the spring season of 1918 to the fullest capacity of the largest mills at prices ranging from 16½ cents to 17½ cents. In the middle of December, when it became necessary to put prices on gingham lines for fall, 1918, these lines were priced at 22½ cents and 23½ cents. The well known Amoskeag 19,000 range shirting chambray was priced for fall, 1918, at 25 cents a yard, net. In early 1915, the same cloth sold as low as 6½ cents. The curious part of the situation was that the demands at the top prices indicated were less easily satisfied than the calls made for the goods at the low prices.

The cotton blanket season of fall, 1918, was opened in December of 1917, a month earlier than usual, and prices showed an advance of 70 per cent. Some of the wool finished goods were bought at over $1 per pound for delivery to September, 1918. Even at prices on this level, it was found necessary to allot the product of the mills and no

customer was given all he was prepared to buy. The cotton blanket shortage was brought about by the heavy demand for wool goods for war purposes, by the use of many cotton blankets in camps, hospitals, and places where they would serve, and by the increased demand from civilian sources when wool goods values ran to unworkable levels. When it was found that there were neither wool nor cotton blankets enough in sight to meet the needs of the trade, consumers turned to cotton comfortables and bought them as substitutes. These goods are made of batting, and outside coverings of printed fabrics, thus taking still further quantities of the staple.

The government began to use denims in a large way and they became so scarce that large overall manufacturers went to Washington at different periods and pleaded before the Priorities Board for supplies to keep their machines in operation. For months at a time, agents had their goods at value or withdrawn.

The government was a large buyer of tickings, and the Red Cross and medical departments had to be supplied. Mattress manufacturers took large contracts and placed large orders with mills when they were able to do so. In this way the demand for tickings reached a stage where a price of 35 cents was willingly paid for 8 ounce staples, cloths that sell in normal times around 12 cents. As the pressure for looms with twill motions was increased greatly by the call for uniform drills, the supply of machinery for tickings for civilian use was cut down.

American prints opened the year at 9 cents and the price reached 13 cents by December. Fruit of the Loom 4-4 bleached muslins were priced at 11 cents at the opening of the year and jumped from 12 cents in April, to 18 cents in August. They were held at that figure till the close. A 40-inch 3.50 Osnaburg that sold at 8½ cents in December, 1916, brought 15 cents in December, 1917. A 7-ounce Osnaburg that sold for 8¼ cents in December, 1916, brought 19½ cents in November of 1917. A 40-inch 2.85 yard sheeting that sold for 11 cents in November of 1916 sold for 20 cents at the end of last November. A 4.25 yard sheeting that sold at 8¼ cents was bought for contract delivery in a large way at 14 cents and sold higher for spot delivery. These facts will indicate pretty clearly what happened on many of the more staple fabrics used largely all over the country.

It became evident in the early fall that it would be neccessary to discourage the manufacture of pleasure automobiles. This led to a revision of contracts for cloths used in this trade and there was considerable reselling in anticipation of accumulations that at no time met the fears of producers. The bag trades absorbed many goods, while others were found useful for many government and Red Cross purposes. In the meantime, the looms normally used for special constructions for automobile work were changed over to many goods badly needed by the government. An exception for a time was found in the 50 to 60 inch goods of light construction and for a time the products of looms of this sort lagged.

The fine and fancy goods division of the markets were affected adversely for some time by the pressure of war conditions. Converters resold many of their gray goods and mills discouraged orders on novelties or very fine fancies except in a limited way. At one time a third of the looms in New Bedford were idle. But there was such a steady demand for yarns that many of the mills making fine goods kept their spinning and carding departments operating in full. Toward the end of the year orders began to increase for balloon and aeroplane cloths, with which the government had been experimenting for some time, and in the last month of the year it looked as if every available loom that could weave special fine fabrics for these purposes would be called upon. Some few large contracts were placed on cloths made of 60's and 80's combed sea island yarns, and extra long staples, and of very close construction. Hardly more than 60 to 70 yards a week of the goods can be woven on a single loom, so that the prospects are that mills in the fine division will have more work in 1918.

Cloths such as poplins, oxfords, gabardines, and pongees, that are very serviceable were sold steadily and bid fair to continue popular because of the degree of utility in them for dress purposes. There is also a marked trend toward the finer nainsooks, longcloths, and other fine underwear goods. Printed lawns and batistes began to sell better. Many fine specialty fabrics were printed in ginghams designs in the last two months of the year and if they sell as well as expected, they are likely to give employment to idle fine goods looms for some time.

In the last half of the year, when it became evident that economy was to be a factor of large consequence in dress, mills began discontinuing the output of many fancy waistings, fine shirtings, embroidered voiles, and other fancies. One Southern mill that had specialized for two or three years on fancies turned the whole loomage over to plain cloths for which the demand was active, almost uninterruptedly from May forward.

While the supply of wide sheetings bade fair in the early part of the European war to be ample for all requirements, because of the material addition to the loomage in recent years, the developments of the year showed that an over-supply is impossible for a long time to come. The character of the demand is indicated in part by the rise of 60 per cent in the selling prices of most of the well known brands. But at different times during the year the scarcity of 63 and 72 inch goods was very marked, especially in commercial channels. Hospital sizes of sheets were sought everywhere and stocks were depleted to a point where it became necessary for government agencies to virtually commandeer many looms for medical supply requirements and for Red Cross purposes.

It was thought that quilt mills would find little to do as war went on extending. This proved erroneous, for while the demand for many fancies was lessened, there was a greater call than usual for the heavier qualities to take the place of comforters, cotton blankets, and other bed coverings not available. Moreover, as the pressure for cotton duck grew in government cannels, many of the quilt mills began making three widths on wide looms. When the year closed the large quilt mills of the country had all the work they could handle. The towel business, on the other hand, was good only on the plainer qualities. Turkish and fancy towel trade was dull at different times and many of the jacquard fancies were discontinued by manufacturers.

The upholstery mills that use large qauntities of cotton yarns found trade slow, and in the same way, the dullness in the carpet trade cut off a large outlet for yarns. This was more than made up in the calls for yarns for duck and special fabrics wanted in the conduct of the war. It was noticeable toward the end of the year that many of the

small miscellaneous weavers of art cottons, and novelties were cutting out their offerings and many of the fancy braid and tape mills also found plenty of employment on staples of various sorts needed for various war purposes.

Distributors of goods did a very profitable business throughout the year. For various reasons they were obsessed at different times with the idea that cotton and cotton goods were overpriced and could not be sold. Some of them even attempted to hold out of the market at intervals with the expectation of breaking prices. They carried reduced stocks because of the high prices. When their salesmen went on the road for orders in advance for spring delivery, 1918, they suddenly changed their attitude, as it developed that retailers in agricultural sections were confident of selling merchandise freely at almost any price.

Nothing seems of greater consequence in the mercantile influence of goods upon raw cotton, than to note that, during the year, the jobbers and retailers, who have held trade back many times because of their fixed ideas about fixed prices, have been compelled to abandon old price levels and get a reasonable profit on their merchandise based upon costs, and without a fanatic regard to whether the consumer would pay 10 cents, 15 cents, 25 cents, or some other arbitrary price demanded by vicious custom.

The labor conditions have grown more serious for manufacturers as the war has gone on. In 22 months, ending with December 3d, Fall River mills advanced the wages of operatives 56 per cent. Some Southern mills advanced their wage costs during the year 25 per cent. Some of the cotton duck mills made flat advances of 50 per cent four months after this country entered upon war.

It is apparent to all manufacturers who are viewing conditions apart from their own immediate interests that a change of great moment is occurring in the relations of labor and capital in textile lines. For years, producers and operatives have been content with very moderate profits based upon the measure of intelligence required, or measured by contrast with what has obtained in other lines of industry. American textile wages will not go back for many years to come. This does not imply that costs will not be lowered, but that a new relationship of capital and labor will be brought about. At this time, textile labor is no less patriotic in its share of war effort than capital, and out of harmonious working in time of common danger there is certain to come a better understanding between owners and workers.

A noteworthy feature of the year's trade was the reduction of commissions paid for selling many Southern products. It was a natural result of the ability of mills to finance a larger share of their own business, and resulting from the handsome profits of the period. Several groups of cotton yarn mills have opened agencies of their own in New York and Philadelphia and they keep a close control of their sales. Many cloth manufacturers have either changed their selling agencies or had commissions reduced by their regular agents. A closer watch is being kept upon the service rendered by merchants in the sale of mill goods and this has all been made possible by a new financial independence on the part of stockholders.

There has been a very considerable change since a year ago in the methods of doing business and many more are under way. One of the largest agencies handling Southern goods has put into effect a new form of gray goods contract based upon the contract adopted some years ago by the two associations of cotton manufacturers and with some important modifications. Instead of selling goods f. o. b. mill, goods are now sold "Delivery at mill." The need for this change became pressing when many embargoes were placed by railroads upon the acceptance and shipment of freights. These embargoes were not arbitrary at all, but were brought about through congestion induced by heavy government transportation, which was always given the right of way.

Some buyers of cotton goods sought to get from under unprofitable contracts because mills could not deliver on cars. Other buyers refused to pay bills due on goods held ready for shipment, unless accompanied with bills of lading. As the mills were stopped from securing bills of lading by the refusal of railroads to permit them to place the goods on cars, they were helpless to fulfill the identical terms of their contracts, although ready at any time to deliver the finished goods to a buyer who would come with auto, flying machine, or other means of conveyance. The point would ordinarily be regarded as one of legal quibbling but when buyers sought to take advantage of it, the mills laid down the rule that readiness to deliver at mill completed the contract and entitled them to payment.

For many years it has been a trade custom for mills to pay freight on goods to New York, to bleachery, or to destination. This custom became a source of abuse through efforts made by some buyers to fasten the ownership for merchandise on the shipper instead of on the carrier, who was the real agent of the buyer. This has already led to an abandonment of the whole policy of allowing freight charges on cotton goods among some of the Eastern mills. Some of the Southern mills have begun to allow a definite sum as payment for freights to a given point. It is expected that some common agreement as to a changed method will be agreed upon if the war goes on for another year or two, and that freights will be paid by the buyer as in nearly every other line of business.

Owing to the great risks of long sales under war conditions, and principally because prices are so high and unstable, several mills and selling houses have shortened their terms of payment and the length of time they will deliver goods on a single contract. Some factors have cut their discounts, and as a rule, the tendency in the trade is toward a shortening of terms of payment.

At the moment of writing it is believed that a third of the product of cotton mills for next year is already under order. Many government contracts will run throughout the year and virtually during the period of the war. Sales for fall delivery have begun actively. There are plenty of mills whose sales are so large that they will have difficulty in making deliveries if there is any further contraction in the labor supply. Many mills have sold 80 per cent of their possible output for delivery till July 1st.

New mills and enlargements have not been as numerous as last year. Machine shops have been very busy, especially on work intended to assist various plants in completing government work. They have plenty of opportunities for work, but the demands for machine labor are very pressing and they cannot be interfered with when government work is to be done.

Merchants are of the opinion that 1918 will not be a year of as large profits as 1917. A great many new difficulties are already foreshadowed in trading, some of which are to be the outgrowth of a continued readjustment of

consumption in war time to production as affected by government needs. Taxation will be very heavy and it implies a cash payment. Transportation is certain to be irregular and troublesome. Labor will grow scarcer. Raw material costs promise to be maintained until a large surplus crop can be grown, which does not seem within the bounds of expectation for a long time. The margin of profit may come under government control through price fixing. These are only a few of the things that look difficult now. It is to be kept in mind, however, that if a third of the difficulties overcome successfully in 1917, by cotton manufacturers, had been prediced as certainties of experience a year ago, gloom would have been immeasurable. What is now sure is the fact that American courage is as great as ever it was, and American resourcefulness in cotton manufacturing last year was inspiring.

Modern Methods in Textile Mills.

"Modern Methods in Textile Mills" is the title of a new book by Eugene Szepesi in which is discussed a number of practical mill problems presented in a unique and interesting manner. The contents includes a story of Jacquard, the greatest of all textile inventors; Looking Ahead; Causes and Effect; The Eyes of the Worker; Stubby Jim; Expensive Economy; Preparing for Emergencies; and Night Work. These are the titles of the eight separate sketches which comprise the book. Each one discusses a common problem and each carries its lesson in efficiency.

The Westinghouse Lamp Company, 165 Broadway, New York City, have arranged to distribute these cloth bound books among managers and superintendents of cotton mills without any cost to the recipient. In writing for your copy state your official position in the mill.

Annual Review of the Fall River Mill Stock Market.

BY G. M. HAFFARDS AND CO.

The continuation of the trend of affairs existing at the close of 1915 have culminated for the year 1917 in an abnormal condition of affairs in our financial, social and industrial life. Particularly prosperous has been the experience in all lines relating to war products. Of these cotton manufacturing is one, having enjoyed one of, if not the best, years in its history

While enjoying great prosperity during 1916 our country's entrance into the war intensified this condition, and led to great profits. Because of the utilization of machinery makers' works on other lines the increase of new spindles was not material, amounting to only about 1,000,000 spindles.

With the continuation of the war calling for great production to meet government demands the future holds forth great promise of future good earnings.

Locally we have had the most profitable business we have ever enjoyed and the return to stockholders and employees has been the largest of any years of recent record. The increase in wages to the operatives since Jan. 1, 1916, will amount to a sum in excess of $9,000,000 per year, or equivalent to about 47½ per cent increase.

There has been practically no increase in spindles due to the cause before mentioned.

Capital has been increased through the making of stock dividends to more nearly represent the value of the plants.

Cash dividends of $4,220,110 were paid on a capital of $33,160,000, or an average of 12.80 per cent—and in addition extra stock dividends were made by several of the corporations as shown in the detailed statement.

The increase over 1916 amounts to $1,120,616, or in other words the average of 1917 is 12.82 per cent as against 7.96 for the previous year. The future promises continued good business for cotton manufacturing.

FALL RIVER MANUFACTURING STATISTICS COMPILED BY G. M. HAFFORDS & CO.

Corporation	Par Value	Capital	Rate 1917	Rate 1916	Amount
American Linen Co.	100	$ 800,000	9	4½	$ 72,000
Ancona Company Pfd.	100	100,000	9	4½	9,000
Ancona Company Com.	100	200,000	0	0	
Arkwright Mills	100	450,000	10	4½	45,000
Barnard Mfg. Co.	100	500,000	3½	0	17,500
Bourne Mills	100	1,000,000	7½	6	75,000
Border City Mfg. Co.	100	1,200,000	8½ a	5½	95,000
Chace Mills	100	1,200,000	15	6½	180,000
Charlton Mills	100	800,000	7	5	56,000
Cornell Mills	100	400,000	26	8	104,000
Conanicut Mills	100	300,000b	6½	5½	16,360
Davis Mills	100	1,875,000	10½ c	8	150,000
Davol Mills	100	500,000	12	6	60,000
Flint Mills	100	1,160,000	20	11½	232,000
Granite Mills	100	1,250,000	10½ d	6	117,500
Hargraves Mills	100	800,000	5½	0	44,000
King Philip Mills	100	1,500,000	19	7½	285,000
Lincoln Mfg. Co.	100	1,625,000	10½ e	6	151,875
Luther Mfg. Co.	100	525,000	22	16	115,500
Laurel Lake Mills	100	600,000	11½	7	69,000
Merchants Mfg. Co.	100	1,500,000	16 f	7	216,000
Mechanics Mills	100	750,000	13½	6	101,250
Narragansett Mills	100	400,000	12½	5½	50,000
Osborn Mills	100	750,000	13½	6½	101,250
Parker Mills	100	800,000	5½	0	44,000
Pilgrim Mills, Pfd.	100	350,000	8	14	28,000
Pilgrim Mills, Com.	100	700,000	8	4	56,000
Pocasset Mfg. Co.	100	1,200,000	7½	5½	90,000
Richard Borden Mfg. Co.	100	1,000,000	35	11	350,000
Sagamore Mfg. Co.	100	1,800,000	40 g	20	570,000
Seaconnet Mills	100	600,000	5½	1	33,000
Shove Mills	100	825,000	6½ h	5½	45,375
Stafford Mills	100	1,000,000	9	1	90,000
Stevens Mfg. Co.	100	1,200,000	6	6	72,000
Tecumseh Mills	100	750,000	19	7½	142,500
Troy C. & W. Mfy.	500	300,000	8	8	24,000
Union Cotton Mfg. Co.	100	1,200,000	16	36	192,000
Wampanoag Mills	100	750,000	6	3½	45,000
Weetamoe Mills	100	500,000	15	6½	75,000
		$33,160,000			$4,220,110

Average of 12,822x%.

a In addition to which a 20% Stock Dividend was paid.
b Authorized Capital. Amount outstanding $251,700.
c In addition to which a 50% Stock Dividend was paid.
d In addition to which a 25% Stock Divident was paid.
e In addition to which a 30% Stock Dividend was paid.
f In addition to which a 25% Stock Dividend was paid.
g In addition to which a 50% Stock Dividend was paid.
h In addition to which a 50% Stock Dividend was paid.

"Chapman Ball Bearings for Transmission" is the title of illustrated catalog No. 3 recently issued by the Transmission Ball Bearing Company, Inc., 1050 Military Road, Buffalo, New York. This 52 page catalog not only thoroughly illustrates and describes their ball bearing hangers and pillow blocks, but also shows the application of Chapman type ball bearings for exhaust fans and blowers; industrial carwheels; loose pulley bushings, clutch sleeves; and numerous other applications. It also contains many illustrations of typical installations of their ball bearing equipment and concludes with a brief description of their ball bearing universal elevating trucks, a full description of which is given in bulletin No. 104. Either the catalog or the bulletin may be secured upon application.

The H. & B. American Machine Company of Pawtucket, R. I., manufacturers of cotton machinery are sending to the trade a wall calendar for 1918 carrying a reproduction of their large plant in addition to the usual calendar pad.

CALIFORNIA COTTON MILLS

Back in the early '80's a cotton mill company was organized at Oakland, California, known as the California Cotton Mills Company. Against all established traditions it has successfully manufactured a variety of fabrics, utilizing both cotton and jute; dyeing, bleaching and making up many of these fabrics in its own plant, and selling direct to the trade. The general view at the top of this page shows the extent of the present plant. The great variety of its products has been largely due to the local—Pacific Coast—demand.

The fact that his plant was the only representative of the great cotton spinning industry in that section of the country in no way deterred General Manager J. R. Millar from using every effort to make it as nearly perfect as possible, considered by the standards of the best practice. Not only are the best mechanical methods in use, but such subjects as sanitation and welfare or health service have received the most careful attention. A medical director looks after the health of this big family, while a trained nurse is in constant attendance to care for those needing minor medical treatment.

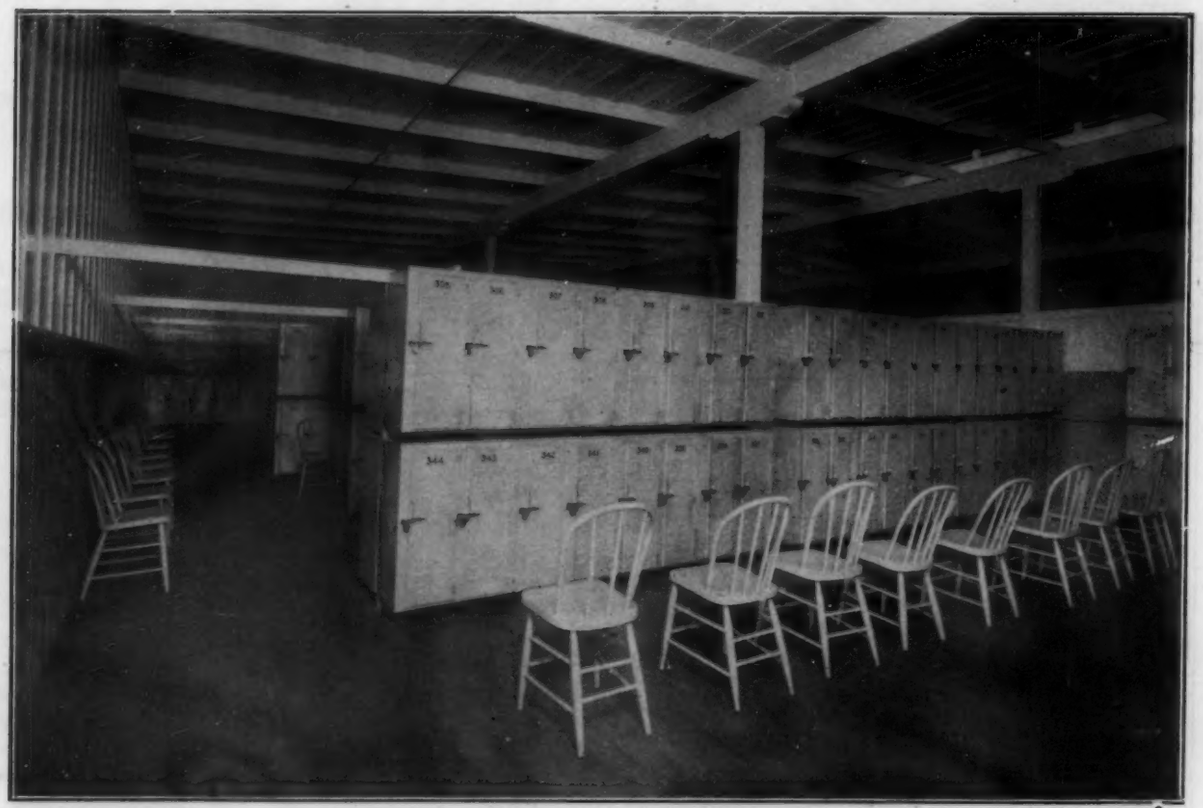
The strictly welfare work, such as looking after the home conditions, cleanliness, orderliness and the general well-being of the employees, is taken care of by a Welfare Secretary, who also keeps complete records of the work of the department.

The method of finishing fabrics for retailers adopted at this plant necessitates a much larger office equipment than is usual and thus produces new problems, very similar to those of the large knitting mills selling direct to the retail trade.

The following photographs tell their own story of what this mill is doing.

OFFICE OF GENERAL MANAGER J. R. MILLAR.

A VIEW OF THE MILL FROM THE NORTH SHOWING THE NEW OFFICE BUILDING IN FRONT. THIS OFFICE BUILDING CONTAINS 6000 SQUARE FEET OF FLOOR SPACE AND IS FINISHEDIN QUARTER SAWED OAK.



SHOWING A SECTION OF A LOCKER ROOM. EACH EMPLOYEE IS PROVIDED WITH ONE STEEL LOCKER. THE MILL CONTAINS FOUR SUCH ROOMS AS THE ONE ILLUSTRATED.

A FRONT VIEW OF THE NURSERY WHERE THE CHILDREN ARE CARED FOR WHILE THE MOTHERS ARE AT WORK. THIS IS LOCATED JUST IN THE REAR OF THE NEW MILL.

BABIES IN THE NURSERY. THESE AND OTHERS ARE CARED FOR BY THE EFFICIENT STAFF SHOWN IN THE FOREGROUND OF THE PICTURE NEXT ABOVE.

THIS MILL HAS A HOSPITAL AND EXAMINING ROOM WHERE A DOCTOR EXAMINES EACH EMPLOYEE TO SEE WHETHER OR NOT THEY ARE PHYSICALLY FIT FOR THE WORK THEY ARE TO PERFORM. THIS INCREASES EFFICIENCY AND DECREASES ACCIDENT LIABILITY.

THE REST ROOM FOR THE OFFICE EMPLOYEES AT THE CALIFORNIA COTTON MILLS.

Southern Textile Exposition and Convention at Greenville

The Second Southern Textile Exposition held at Greenville, S. C., opened its doors to the public on Monday, December 10th. Mayor H. C. Harvley of Greenville welcomed the visitors and spoke of the magnitude of the work which had been accomplished. He thanked the many exhibitors for their cooperation and welcomed them in the name of the city and its people.

While the building was but barely completed, some of the finishing touches being omitted because of lack of time, everyone agreed that it was a splendid exposition building and a wonderful proposition to have been taken up and carried through by a city the size of Greenville. Many of the exhibits were in an even worse condition than was the building, owing to the delay in transportation. Many exhibits were not erected until Monday and were barely done when the doors opened to admit visitors. Some exhibits failed to arrive altogether and were lost in the great mass of express matter that is being transported across the country. Such exhibitors did the best they could under the circumstances, the representatives frequently being on hand to greet their friends and explain the lack of printed matter or some other small item that had failed to show up. In nearly every instance the exhibit proper had been received in time and it was merely some small adjunct that was missing.

Owing to the inability of the contractor to finish the building in time for the original date set in November, the weather man turned a cold shoulder and not only gave below freezing weather to Greenville for several days prior to the opening of the show, but also on Tuesday he showed the Northern visitors that the South really could have a snowstorm, and about four and a half inches of the fleecy white substance was scattered over Greenville and remained throughout the week.

The Exposition authorities report a recorded attendance of something like 36,000 people. Mill men were present all the way from Maine to Texas and the majority of exhibitors reported satisfactory interviews and many good prospects.

The golf tournament that was to have been pulled off by the Hunter Export & Commission Company of New York was beaten to a frazzle by old King Winter as no one cared to play golf in the snow. Many visitors who brought their golf equipment were disappointed at this unfortunate trend of events.

Southern Textile Association.

On Wednesday evening many members of the Southern Textile Association began to congregate and on Thursday noon the first session was called to order by President J. M. Davis in Cleveland hall, where more than a hundred men heard Mayor H. C. Harvley of Greenville deliver the address of welcome. The response to this address was to have been made by I. B. Covington, superintendent of the Florence Cotton Mills at Forest City, N. C., but owing to the fact that train No. 29 on the Southern was several hours late that morning, Mr. Covington had not arrived and the response was omitted.

The next feature on the program was the semi-annual address by Col. J. Marion Davis of Newberry, S. C., president of the association, who spoke in part as follows:

President's Address.

It is a great honor to hold the office of president of such an association as this, composed as it is of men who stand in the front ranks of the world's manufacturing army. To me it becomes a greater honor still when I know that every soldier in this army is arrayed today with the President of our country in the fight for freedom and democracy.

It fills me with pride when I think that never have I heard one single imputation of disloyalty or half-hearted patriotism cast upon our cotton manufacturing industry. I say it without conceit but with the assurance of stating an absolute fact, that unhesitatingly our mills and our mill people have responded to every demand made upon them toward carrying our country and our allies to victory. Our young men have answered nobly the President's call for troops; our housewives, with hardly an exception, have signified their willingness to aid in the great matter of food conservation; and our mills themselves have shown their readiness to aid financially by promptly and liberally buying Liberty Bonds of both issues. I do not believe any industry in this whole land can truly claim that it has surpassed us in this respect. To the last man and the last dollar we belong to our country and our country will we faithfully serve.

Conditions dissimilar to any we have ever met before have arisen from the war in Europe. A season of almost unprecedented financial and industrial depression marked its beginning. Stocks declined; manufacturing plants curtailed their output; a general feeling of pessimism overran the whole country; no man knew what next to expect. This condition was short-lived and followed by another which went to the opposite extreme. Suddenly there burst full-fledged upon us such an era of prosperity as our wildest flights of imagination had never dreamed. Stocks soared to unheard of heights; millionaires were made overnight; industrial wheels, some grown rusty from disuse, began to gather momentum and spin in frantic haste; money in ever-increasing quantities began to pour in upon us as the warring nations called louder and louder for America's supplies. An unusual, an abnormal condition was upon us and remains even today.

Great as this season of prosperity is and pervading every line of work as it does, it is not safe for us to confidently believe that it will continue uninterrupted. Our prosperous condition is caused in a large measure by the cessation of industries in the European countries. True, the greatest cause is, or rather was before we ourselves entered the war, the enormously increased demands for our products, but this increased demand had as one of its reasons the shutting down of much of the manufacturing industry of the warring nations. Now that America has been forced into the conflict, it is reasonable to expect that the demands and confusion of war will interfere with some lines of industry in this country. Before the war is closed, owing to the scarcity or absolute lack of one commodity or another, it is possible that some or all of our mills may find themselves with machinery standing idle. I do not

say this in a pessimistic spirit; I state it merely as a condition which almost inevitably accompanies every armed conflict, and a condition which, if coming upon us, must be accepted as one of the fortunes of war and borne patiently, even cheerfully, as being for the best interest of our country.

But this war will not last forever. Do we not even now discern faint signs of its approaching end? And when it does end, we must face the sharpest competition from foreign manufacturers that has ever confronted us. During these last few years when the United States stood as the one great market place for the whole world, we have gained an ascendency in commerce and manufacturing which, after the war, must withstand the assaults of all the nations of the earth. Will the end find us prepared?

As a means toward the holding of our present high position no one thing should be more emphasized, I believe, than plant efficiency.

Every possible advantage should be taken to equip our plants with the latest improved appliances. The exposition here is stocked with the most modern equipment; perhaps right here you may find the very thing you need, the solution of the problem that troubles you. To my mind, it is poor economy, certainly a lessening of actual efficiency, to continue the operation of obsolete equipment. A dollar wisely spent in the scrapping and replacement of out-of-date material is a dollar well spent.

We must advance with the times; better still, we must keep a bit ahead and lead. In the manufacturing world, as in every province of human endeavor, he who goes not forward falls back. There is no such thing possible as standing still. A manufacturing plant which does not press forward to higher achievements, becomes, figuratively speaking, a stagnant pool, fit only to be drained off into the swamps of failure. A manufacturing plant whose methods of today are the same as those of years past is falling behind; and every day which sees the old methods unchanged sees just so much sapping of plant efficiency. A cotton mill which finds itself at the end of the war in the same physical condition as at the beginning, will labor under a handicap difficult if not impossible to be overcome.

Aside from the physical condition of the plant there is another phase of the matter which, if neglected or minimized, will sweep us into the danger zone. Under present market conditions it is easy to make money. This fact, together with the shortage of labor, brings us to the danger of losing sight in some degree of the value of quality. Goods, the quality of which before present conditions prevailed would have made them dregs upon the market, are today readily disposed of. The temptation before us to sacrifice high quality of production to increased quantity of production is one which we must overcome if we would continue to hold to our elevated ideals of service. The temptation is all the stronger because every mill in the South today is hampered to a great extent by a scarcity of labor.

This shortage of labor is a direct result of war conditions, except in instances arising from the enforcement of the new national child labor law. This law, coming as it did at a time when labor was most needed, has worked a great handicap on our mills. The government inspectors, however, have been exceedingly liberal in handling the different phases of the law, and have by their reasonable attitude considerably lessened the inconvenience of complying with it. The Children's Bureau under the direction of Miss Grace Abbott has, I believe, handled the situation with great tact and consideration.

Last June I had the privilege of representing this association at Washington before a committee on rules governing this child labor law. A number of gentlemen were present from the South, and some concessions in the formation of the rules were secured from the committee.

While this law has worked a hardship on our mills, no less has it brought inconvenience, and in some cases more than inconvenience, to numbers of our employees.

I am glad to note that the mills generally are meeting this situation in a noble way by paying higher wages, providing more convenient homes and in a large measure making mill work as pleasant and as profitable as any other line of industry.

We have the greatest textile association in the greatest country on earth, and its achievements and ideals are such that every mill man in the South should feel proud, and undoubtedly does feel proud, to hold membership in this excellent organization.

Owing to the absence of Lieutenant Governor O. Max Gardner of North Carolina, who was next scheduled on the program, and also to the succeeding speaker, Superintendent J. W. Long from Lumberton, N. C., and still further induced by the nearly freezing temperature of the hall, the association then adjourned its first session.

On Friday morning the second session was to be held in the same hall at 10:00 o'clock. However, at this hour the hall was uncomfortably cold and it was decided to omit the session at this place and to stop the machinery at the Exposition Hall at 12:00 o'clock to permit the address by the Hon. Max Gardner of North Carolina on the subject of "The Patriotism of Labor." Lieutenant Governor Gardner was introduced by Senator A. M. Dixon, Superintendent of the Trenton Cotton Mills at Gastonia, N. C. Mr. Gardner, a forceful and interesting speaker, declared that the industries of the United States were rallying to the call of the strenuous times in patriotic spirit. "Keep the wheels turning," he urged the Southern Textile Association to adopt as its motto. He told the mill men gathered before him that they controlled to a great degree the lives, the destinies and the happiness of the hundreds of workers under them. That it was their place to teach and to lead.

The war and its accompanying problems were treated by Mr. Gardner in a manner that brought his hearers cheering to their feet on a number of occasions. He closed his address with a mighty appeal to the audience for a pledge of love and service to the flag and to the nation.

At 8:30 o'clock Friday night the machinery was again stilled while all the visitors listened to an address by Dr. John E. White, D. D., of Anderson, S. C., on the subject "Man Power." Dr. White, who is one of the forceful speakers of the state, spoke in part as follows:

"Man Power."

Wherever men are meeting together in this country, whether they be manufacturers, doctors, farmers, religious men, or bankers, all talk is colored by the shadow of the world war that lies directly across our path. We have been told time and time again that this war would leave the world changed, that this world would not be the same world any more. Some of us have wondered what that remark contains of truth, and I have been trying to find if possible just what permament effect this war is going to

have upon human life. Its temporary effects are palpable, but its permanent effects are not so easily discerned.

What are the changes that we may expect to find permanent, which affect your life and my life?—and that is a constructive inquiry, if one can deal with it intelligently. Well, one thing is sure: The changes that are going to be wrought are not going to be wrought through the loss of prosperity, though more property has been consumed in this war in less than three years than was ever consumed in twenty years of human history. Not all of it has gone to waste; for one of the effects of the war is the dislocation of property and its redistribution, which does not always work an ill effect. The change that is going to be wrought, is not going to be on account of the loss of life, enormous as it is, for life will reproduce itself, and replace its loss in the course of time; nor is it going to be on account of changed maps and new political boundaries in Europe, for as far as America is concerned, it is not going to matter very much what does occur in the political reorganization of Europe; but the great change which is going to come through this war will be moral and spiritual. I do not necessarily mean in a religious sense at all, but as concerns the state of the human mind, the outlook of human life, and the new sense of relationships as between men.

Two things have been uncovered to vision. Two great facts stand impressively before any man who undertakes to give a full perspective to the present world war. This war has first uncovered an enormous barbarism lying latent in human nature. The cavernous depths of evil have been revealed. The unspeakable possibilities of wrong, of injustice, of cruelty, and of brutality in mankind have been thrown on the pages of history. It has been a period in which the veil has been lifted from the human heart and men now see what the Great Teacher saw, that the heart is full of wickedness, and that underneath all the veneer of civilization, underneath all its fair surface, there lies in human nature a great turgid sea, which may be lashed into storm and fury, and out of it may arise some awful shapes of satyrs to shock history and chill the heart of man.

Another thing has been uncovered and made clear by the war. It is the solidarity of mankind, the oneness of the human race, the essential unity that exists among men of all nations and peoples, and colors, and tribes and nationalities. The effect of that discovery has been to reveal the essential harmony that lies at the root of mankind, and we now realize that we are not an isolated people, and cannot be, and that there is no such thing in the world as an isolated man. "No man lives to himself," and this whole world has been brought into one army as it were—or better perhaps this figure—an almighty power has shaken the world until men have run together, and we see the lump, the mass, of humanity all of the same sort and all bearing the imprint of the same nature. This will have the effect of making brotherhood possible. This is the revolutionizing influence that will sweep in human society in years to come. We are rising therefore by this revelation to a supreme point of view, "e'en though it be a cross that raises us."

Now the problem that confronts the world in the face of these two facts may be stated, I believe, in two propositions which I wish to submit to you. The first is, that realizing that human nature is full of possible perils, and that this world is somehow or other suddenly discovered not to be a safe place to live in, we must give more attention to humankind if we want to make the world safer to live in. One of the shocking experiences which has developed is that one generation, two generations, three generations, or more, may work and toil and may accumulate wealth and may organize social orders, only to have everything put in jeopardy in an hour. There has come to us an indictment of the security of the basis of human possession. Nothing now seems positively secure. There is in this world no absolute title to property or material possession. We have realized that nothing is safe unless men are saved, and saved in that profound way that in all their agreements they regard justice and right.

In the past we have been so intensely occupied with the progress and development of things that we have missed the truth, that the great work of the world after all is the problem of getting hold of the raw material that lies in human nature and working it into beauty and power, and we have not gotten out of the man what God put in him to be gotten out! You may select the finest specimen of a developed man that exists on the stage of human action, and yet there lies in that man great potentialities which have not yet been developed; and not until our educational processes are designed to draw the finest qualities of our natures to the front and set them in regal authority over our lives, will we begin to conceive of education in its eternal sweep and power, when it takes hold of a baby in the cradle and by the application of moral influence and vital force and human sympathy works that baby in the cradle up into the size and shape of the future man, endowed and imbued with powers which now are regarded as beyond our reach, will it be on the road to education in its most sublime and potential sense.

So you busienss men can recognize that it is the man that is behind, and that it is in the man that lies the true valuation of work, and after all that, common sense requires us to see that only as we develop men do we make property secure, and only as we develop men do we really add to the basic raw material, values that are higher and the very much greater valuation which comes from the addition of genius to things.

In the South we have thirty millions of people. What I am saying is carefully pondered—thirty millions of people—and only ten millions of them are safely civilized in the South. Ten millions in the South are all whose names are on the tax books as property owners, out of thirty millions. Ten millions alone have any real stake in the country, for a real stake in the country is a body of land or a fixed engagement with production. There are twenty millions that are not in a safe position socially—twenty millions who, if the influence of the ten millions were withdrawn, would generally lapse instead of coming forward; twenty millions would go back instead of advance in the South, but for the upbuilding influence of the ten millions who think and read.

You say, "Where are these twenty millions?" There are four millions of them in our Southern mountain region, who are isolated and have not yet been much touched by the progress of the world. They do not make a great problem, because they are not in our way. They simply have not been graded up. I spent years of my life in the mountains, teaching twenty miles from a railroad, and I know the stuff that's there—pure gold; but I also know

that it is not ready to enter into the great problems that confront society.

There are then five million white people in the South outside the mountains—nearly six—who own no land and who are not responsible men, and who do not care much whether school keeps or not, who are easy prey for the the demagogue, and whose prejudices and passions are easily aroused. And then there are the ten million negroes that lie below them in the social order. There's our problem. How may we get beneath the man that is behind and bring him up. How may we increase his value? How may we enlarge his capacity for public service? How may we add to his worth as a citizen? I will tell you, gentlemen, it is a problem which should enlist all our sympathies that are possilbe in human nature. It is the human problem; and we must never imagine, when we are riding around in our automobiles or sitting down on our shady porches, that we are safe, or that democracy is safe, or that the country is safe, or that anything is safe in this or any other country, until there is put around the very humblest man the arm of brotherhood to help him forward into a larger conception of responsibility and a larger ability to discharge his obligations to his fellowman.

Another thing uncovered by this war is that we have got to find a moral equivalent for war. We say we have got to find something that will be a substitute and put it out of business. We have got to find something that puts the whole hellish business of war out of business. That is what this war has uncovered. The last interview that Mr. Balfour held with President Wilson occurred at the White House on a Wednesday night. It was raining outside and the crowd had dispersed; the guard stood at the doors; midnight came, and these two sympathetic men stood up to say farewell. The President said: "Mr. Balfour, we have the information now with reference to military matters; but I would like to say to you personally that I am deeply concerned beyond that to know what is to become of this world after the war is over. How can it be safe for people to live in—safe for democracy? What is the future. Are we to be preyed upon by wars at the will of men, since it is now seen that one nation at war may involve every other nation?" Mr. Balfour said: "Mr. President, every British soldier and every French soldier now in the trenches would leave them in twenty-four hours if he did not believe in his heart that this is the last war, and that he is fighting to kill the dragon. The object of this war on the Allies' side is the destruction of war on this planet." He sounded the key-note; and it is the note I represent here—the problem of the future and the present is how to make an end of war. You cannot do it by making peace; you cannot do it by making treaties, for we have found that without war, society tends to become flabby, and in times of long sustained peace and prosperity, men run to luxuries, and the nobler instincts are left without cultivation. If as many as five generations go by in peace and prosperity, manhood would play out, and war would have to come to restore the smoldering, dying embers of sacrificial fire and make men in the presence of hardship feel the sting that makes them. We have got to have war or its substitute. You are not going to save this world by the absence of war or a substitute for war: that's no solution. Society will rot if that's all you are going to do. We have not to find a moral substitute for war. You have got to get an order organized upon the ideal that men are to be soldiers somewhere.

That's the problem. Is there any hope in it? It has a great deal of hope, and this present war is uncovering it. What has been the marked effect upon the business world for the last few months in this country? Is it not this: That now, for the first time in the history of the world, we—every one of us—feel like we are soldiers? We—everyone, the farmer with his hoe, the business man in his office, the manufacturer in his plant, the banker at his desk—realizes a soldierly relation to the rest of the world, that he is a part of the struggle. No longer is it the man in uniform that symbolizes the spirit of conflict, but we have been hearing and we have been feeling that the boy who plants a corn patch, that the woman who makes her preserves and sets them in her pantry, that those who conserve food, that those who are individually planting their seven rows of corn, are engaged in soldierly undertakings, that we are all in war. What this war has made clear as never before is that war no longer represents the military, but it represents the industrial and commercial and moral forces of society, from bottom to top. We no longer mobilize armies and navies: We mobilize civilization when we engage in war; that is, probably, to me the most inviting suggestion as a substitute for war. It is that we should not lose this high inspiration under which we are now acting, but that we should so nurse and conserve and appreciate its value that men, after this war is over, will look upon their work—not as a field upon which they are to gain for themselves selfish aggrandizement, not as a job upon which they are to sequester for themselves properties, but as a battlefield of life, on which men in every walk of life may do the part of soldiers and share the common victory of humanity. That's what we have got to come to.

Finally I come face to face, not with ideals, but with facts—we are studying what the future is going to be. We are in the midst of an awful present, and we have got to meet the present before we can grapple with the future. At this moment our country is launched into this terriffic war—a war so far superior in its volume to any wars of the past that there is nothing, nothing with which to compare it—a war which is involving at the present time thirty-two million men upon the battlefields of Europe—and a war that will take to the soil of France two million American boys to mingle their blood with the more-than-seven-millions who have already died in this awful struggle. We say we don't understand it; we don't realize. We do not. But I want you all to have it appear to you as it is. A war like this must come to each and all. No man or woman or child shall escape its touch. We have got to pay its price—in our dollars. We don't get out so easily and cheap as that. We have got to pay the price in blood. We are engaged in the war for a high purpose. We are pitching it not on the level of our cupidity, but our ideals. We are in it because the issue is the question of whether democracy or autocracy shall be the future order of humanity. The response we made was the only response possible; and God helping us we will guarantee our own democracy to all men, for we know that we cannot guarantee our own democracy if it is not possible to guarantee it for all men. We have got to pay the price.

Let me visualize the experience that awaits us. If you could be at the wharf at one of our seaports a few months from now, you would see a great transport vessel standing at the dock, and on its deck hundreds of boys in khaki. You are searching their faces, looking for someone. I am

looking for my boy; you are looking for yours. They are going to France.

Let me tell you, gentlemen, there have been many great days in this world. It was a great day when Joffre and Balfour touched our shores. But the greatest day that will ever have happened for America will be when your boy and my boy stand in France with Old Glory over them. Why? Because of what it stands for, because of the moral manhood and fibre that is behind it. It stands for as pure and white an ideal as ever man died for since the days that the Covenanters made red the heather of Scotland with their blood. They have got to march up through France and Belgium one hundred and fifty miles, and into the trenches from which fifty per cent of them won't come back. Is it not too much? No. I will tell you why. It is not too much, because 140 years ago, right up and down here in South Carolina, your grandfather and my grandfather were engaged in a war—a struggle for what? The same old struggle we are now launched upon, the same sort of fight, the same sort of issue, having in it the same great thought: the battle for democracy. They were fighting weakly; their resources were exhausted; the Continental Congress' treasury empty and the outlook gloomy. Then in France some young men got together and then one day, LaFayette, Rochambeau and DeGrasse and the other boys of France marched down the gang-plank and stood on American soil to do precisely what your boy and my boy will be doing in France. It is not too much!

This war calls us to sacrifice. It calls us to be the best men that we can be. I am glad we were patient. I am glad we were slow. I am glad that our great President held us back until the mists lifted and the light shone clear. But I am glad that the spirit of America stands revealed.

The Final Session.

The final session of the Convention was held on Saturday morning. Dr. J. A. Baldwin, President of the Southern Industrial Institute of Charlotte, N. C., delivered an address on the subject of "Patriotic Womanhood." He was followed by James L. Carbery, Garden Demonstrator, Rock Hill, S. C., who spoke to the subject

Helping People To Help Themselves.

and said in part as follows:

Few people seem to realize that we are at war, engaged in the worst conflict the world has ever known, fighting the shrewdest, most unscrupulous and barbarous nation on earth, and with chances for victory absolutely dependent upon the utter and complete overthrow of an autocracy and despotism that threatens the world. The price of victory has been, and will continue to be paid in human blood. Living peacefully as we have, in a land of plenty, unprepared for such emergencies, true conditions are harder to realize.

It is difficult for us to conceive that approximately one-half of the entire population of the world is engaged in military activities which have suddenly changed them from producers to consumers of the world's resources. Wanton destruction, submarines and fires of incendiary origin have further decreased our necessaries of life far below the danger point.

When necessity so dictates, there are some things we can do without, but food is not among the number; even the lack of certain foods can so lower human vitality that it can no longer resist diseases that are fatal.

A country at war requires more food than when at peace; in many countries crops have failed to such an extent that at this time the greater part of the world is eagerly looking to America for food, clothing and fuel, the chief essentials of life. Such conditions and responsibilities as have been thrust upon us as a nation must be met bravely by each individual willing to give full heaping measure in *saving, service* and *sacrifice.* There is a most serious and imperative duty for every individual and community Particularly is this true in the greater production and conservation of food and the elimination of waste, extravagance and luxuries. We must be satisfied with less expensive clothing and shoes and endeavor to make what we have last longer by care and repairs.

Playing a most important part in the production and conservation of food is the Mill Village Work of the Horticultural Division of Clemson College, cooperating with the United States Department of Agriculture, a work originated seven years ago by Dr. Seaman A. Knapp, a short time prior to his death. It was designed to encourage cotton mill workers to live at home instead of from sacks and cans, and to break up roadways to the store and for the huckster by using every foot of available land for the intensive production of food as the only sure defense against the high cost of living. Now we are confronted with actual conditions where the need, by reason of war has increased beyond all laws of proportion, and under such circumstances we are doing many things we should have been doing all along. The Demonstration Work has brought added opportunities into the lives of the adult and child, embodying thrift, while conciously, yet irresistibly it invited them directly into higher realms of mental, moral, physical and spiritual development and activity. It has given bigger and broader visions of life while better qualifying them to assume the responsibilities entailed.

If we could induce every resident of the mill villages of the South alone to judiciously and intensively use the land readily available for summer, fall and winter gardens, canning the excesses, millions of dollars worth of food would be added to the world's short supply, and the contents of the pay envelope would thereby be afforded much better opportunity to find its way to the savings banks.

One of the best records made by a mill village was where the people raised and stored 15 bushels of sweet potatoes for each home, total value around $2,000; 21,000 quarts of canned goods valued at $4,000; and hogs estimated to be worth not less than $5,000; while practically every garden is now filled with collards, cabbage, rape, mustard, lettuce, turnips, onions, etc. These people, like many others, are now wanting fruit trees and grape vines to plant around their homes; they are happy and contented and do not want to move. They realized the war was on, prepared accordingly, and have even further distinguished themselves by most liberal contributions to the Red Cross and Liberty Bonds.

We have little time for experimenting, especially in food production at this time; it is better to fall in line with those getting definite results and cooperate. Such industrial activities set in motion the wheels of progress and thrift. Examples of thrift are wonderfully contageous. The outside of a home is a pretty good index as to the people who reside within; find the clean, well kept home and premises, with garden, fruit trees and flowers and you have found people worth while who are making a

success of life. Bank books are usually found in such homes.

We are getting our eyes open and out of the rut that has been holding back the wheels of progress and thrift; let us resolve to thoroughly awaken and accomplish greater results next year through greater and better organized cooperation. Greater food production and conservation at home means more food available for our soldiers and allies. We can at least do out "bit" and prove our patriotism.

Participation in these things must of necessity lead to better individuals and communities, greater production and conservation of the necessaries of life at the most critical time, better health, sanitation, and hosts of other things that mark a pretty straight road to success, greater efficiency, brighter and happier homes, and last but not least, better citizenship and a victorious and speedy termination of the war.

Other papers on the program were by E. S. Draper, Landscape Gardener from Charlotte, N. C., who spoke on Mill Village Development; another on the subject of Dyestuffs by C. R. Delaney of J. S. Young & Company, Hanover, Pa.; a paper by Mrs. Ethel Thomas of the *Mill News*, Charlotte, N. C., on the subject of Woman's Work And Influence; a paper by Miss Pearl Wyche, general superintendent of Welfare Work at the Proximity Manufacturing Company, Greensboro, N. C., on the subject of Welfare Work Among Girls and Women of the Mill Village; and a paper by Miss Mamie Burns, Welfare Worker at Ware Shoals, S. C. Extracts from some of these papers will be found elsewhere in this issue, as well as the paper by J. W. Long, superintendent of the Dresden Cotton Mills at Lumberton, N. C., on the subject of Manufacturing Combed Yarns.

It was decided to hold the next annual meeting at Wrightsvills Beach, N. C., sometime in June. Definite announcements will be made later.

Among the Exhibits.

Descriptions of several of the exhibits did not reach this office in time to be incorporated in the Exposition Number for November. Among these may be mentioned the following:

Spaces 95 to 102 and 110. In these spaces the Stafford Company of Readville, Mass., exhibited four of their automatic looms in operation running under mill conditions. These included a 30 inch duck loom making standard ducks, 45x32, using 12's three-ply warp and 12's three-ply filling. This is the loom which was illustrated on the front cover of the November number of COTTON. A 32 inch denim loom making standard denim, 60x40, with 12's warp and 12's filling. A 36 inch towel loom equipped with cross border dobby making a huck towel 50x33, with 10's warp and 10's filling. A 40 inch sheeting loom making fine sheeting 80x80's, 28's warp and 44's filling. These looms were all driven by individual General Electric motors. The exhibit was in charge of the Southern Representatives of the Stafford Company, Messrs. D. C. Dunn, and D. L. Mackay. Sales Manager W. Woods Smith was also present greeting his many friends.

Spaces 103 to 105 were occupied by Wadsworth, Howland & Company, Inc., 139-141 Federal Street, Boston, Mass. This company was distributing working samples of Dixielite and Bay State Brick and Cement Coating. They were also exhibiting small samples of wood showing the paint applied. Incidentally they were distributing some handsome seal leather pocket notebooks and lead pencils. In attendance at this exhibit was Sales Manager Eugene Felton, Advertising Manager A. M. MacMurray and Special Representative C. J. Hunt.

On the stage at one end of the second floor the Textile Department of Clemson College had a moving exhibit of eight machines as follows: one half hose knitting machine 176 needles; one 176 needle rib top hosiery machine; one Scott & Williams 220 needle Model K. hosiery machine on ladies' hose; one 13 bobbin braider on flat braid; and one 16 bobbin round raider on shoestring fabric. The principal feature of this exhibit was a label loom weaving a miniature American flag and a souvenir badge of the Exposition. This machine was constantly surrounded by crowds of wondering admirers. Another feature of the exhibit was a Draper loom weaving an all leno curtain net. The exhibit was in charge of Prof. C. W. McSwain of the Designing and Weaving Division and his student assistant, C. E. McAllister.

One of the more artistic booths in the exposition hall was the exhibit of the S K F Ball Bearing Company. This space had been converted into a bower of greens and flowers, the beauty of which was enhanced by special electrical effects. Around this exhibit was a fence in summer garden style constructed of lattice work covered with Southern smilax into which was intertwined miniature electric lights. On each newel post was placed a large fern. Over the booth hung an electric sign giving the name and address of the company, and to carry out the floral effect this sign was bordered with smilax. A center table of the booth was covered with Easter lilies and the side tables with carnations. Novel flashing electric signs caught the eye of the visitor and directed him to this exhibit. The mechanical features of the exhibit have already been described in the November Exposition Number and need no repetition at this time. Appropriate literature and souvenirs were distributed. This exhibit was designed and arranged under the supervision of H. N. Trumbull the Advertising Manager of the S K F Company, who was in personal attendance at the exhibit. Also in attendance were S. B. Taylor, R. E. Patterson, E. A. Allen, K. Hamilton and Southern Representative F. V. L. Smith.

The Blauvelt-Wiley Paper Mfg. Co., 135 Charlton Street, New York City, had a very artistic display of mill papers and their showing of printed designs used by yarn mills for a trade mark on their cone wrappers was one that simply forced people to stop and admire. These designs were all printed by the three color process. It was a pleasant surprise to see the great number of Southern mills that have taken up this matter of trade-marking their yarns. It shows that the Southern yarn manufacturers with their improved machinery and labor conditions, are no longer afraid to put their names on the yarns they manufacture and put up a fight with the Eastern mills for the business. One mill man said, "That's what I want and have been trying to find out where to get it; one can always learn something at an exhibit like this." C. L. Blauvelt was in charge of this exhibit and he also took great pleasure in showing the light weight baling paper which they had on exhibit. After this paper was given the ordinary rough handling, it seemed more like a piece of cloth than a piece of paper.

The Kaustine Sales & Service Co., Greenville, S. C., were exhibiting their Kaustine closets which require no

water and no sewer connection. The closet is placed inside the operative's home, giving the maximum of comfort and it is said positively destroys all forms of germ life in the sewage matter by chemical action. This system is being adopted by many mills in the Piedmont section. The exhibit was in charge of L. P. Kilgore of Greenville.

Swan & Finch Company, 165 Broadway, New York City, were showing their well known lubricating products such as Slo-flo and Cupese. This company, who have been manufacturing lubricants for many years, not only had samples of their many products, but also a photographic reproduction of their large plant at Bayonne, N. J. Their booth was tastefully decorated with flags and plants. In attendance were Richard Thackray, sales manager; T. S. Dodd, advertising director; John Rome Battle, engineer; Guy Richdale, manager of the Providence branch; R. A. McLay, engineer; L. A. Block, engineer; and N. K. Stolar. The Swan & Finch products are distributed in the South through the Textile Mill Supply Company of Charlotte, N. C., The Carolina Supply Company of Greenville, S. C., and the Fulton Supply Co. of Atlanta, Ga. W. M. McDonald of the Fulton Supply Company was also in attendance at this booth a large part of the week.

Jos. A. Vogel Company of Wilmington, Del., showed an exhibit of the Vogel Patented Frost Proof Closets which are sold everywhere by jobbers. These closets require no pits, save water and are simple in the extreme. They are equipped with enameled roll flushing rim bowls, heavy brass valves, strong hardwood seat, galvanized tank, malleable seat castings which will not break and are tested under hydraulic pressure before leaving the factory. This exhibit was in charge of W. T. Casey.

Convention Notes.

C. L. Blauvelt of the Blauvelt-Wiley Paper Manufacturing Company was accompanied by Mrs. Blauvelt who was greatly interested in the new Exhibit Hall and the many features shown therein.

General Superintendent E. T. Switzer of the Aberfoyle Company, Chester, Pa., was among those who came prepared to play golf. He was accompanied by his young son who, clad in overalls, had an exhibit all his own in the balcony of the exhibition hall. Later he was seen fully equipped in a khaki uniform which some officer from Camp Sevier had decorated with a captain's bars. Master Switzer pronounced the show a complete success in every way.

Another Aberfoyle representative was Treasurer C. L. Gilliland who came to Greenville to attend the meeting of the Board of Governors of the American Cotton Manufacturers' Association which was held at the Poinsett Club on Saturday, December 15th.

President Fuller E. Callaway of the American Cotton Manufacturers' Association also visited Greenville on Saturday the 15th to attend this meeting of the Board of Governors of the American Association.

Other members of the Board of Governors who were noted at the meeting or the Show were President T. H. Rennie of the Pell City (Ala.) Cotton Mills, General Manager Geo. E. Spofford of the Langley Manufacturing Company, Langley, S. C., J. J. Bradley, Agent, the Merrimack Mills, Huntsville, Ala., and Eugene Holt, Manager of the Aurora Cotton Mills at Burlington, N. C.

Superintendent T. B. Stevenson of the Langley Mills at Langley, S. C., was a visitor for several days during the week.

One of the automobile parties arriving through the snow was Manager Frank W. Gurry of the Graniteville Manufacturing Co., Graniteville, S. C. Mr. Gurry was accompanied by Mrs. Gurry, Treasurer Coles Phinizy of the Graniteville Company, and Superintendent L. J. Cuddy of the Enterprise Manufacturing Company of Augusta, Ga.

"Mr. Honorable E. Chappell," "Mr. Honorable E. Chappell!" Thus called the bell boy at the Ottaray as he went from lobby to dining room and from dining room back to lobby. "Chap" was at the Show shaking hands with his many friends, but he did not stay in Greenville very long. He preferred the Atlanta brand of weather. Some of his friends claimed that he stayed in the city three hours, but others stated that this was an exaggeration.

James E. Coburn, agent at the Androscoggin Mills at Lewiston, Maine, was one of the Northern mill men who was present at the Show. Returning from a side trip to Atlanta, Mr. Coburn was unfortunate enough to be in a rather serious railroad wreck from which he emerged suffering from a broken nose and severe bruises. His many friends are hoping for his complete recovery.

Herbert Midgley, President of Howard Bros. Company, of Worcester, Mass., was one of the New England visitors present during the week.

Frank G. North of Atlanta, on the road to recovery after a long campaign of Billy Sunday, sang, chanted, and otherwise vocally expressed himself upon every occasion possible and impossible about as follows: "Brighten the Corner Where Is You!" However, being among friends, no serious harm came to him.

Robert F. Bowe of the Hunter Export and Commission Company of New York had charge of their exhibit at the Show and was shaking hands with his many old friends in Greenville. He was accompanied by Mrs. Bowe.

F. L. Morse, President of the Morse Chain Company at Ithaca, New York, was in attendance at the Morse Chain exhibit and looking over prospects in the South.

Antonia Spencer, Secretary of the U. S. Ring Traveler Company, Providence, R. I., was another New England man spending Show week in Greenville.

G. A. Cooper, Sales Manager for the Puro Sanitary Drinking Fountain Company of Haydenville, Mass., was on his first visit to the South and was much interested in the prospects offered by this section. A unique feature of his exhibit at the Show was an ice tank drinking fountain on the second floor.

Hermann Seydel came South to attend the Show and was there during a part of the week. S. C. Thomas and Geo. Witherspoon, the old standbys of the Seydel Mfg. Co., were both present throughout the week.

Al. G. Smith of the National Starch Company was greeting his many friends and occasionally sneezing. However, Al's sneeze has much improved since the recent wreck on the L. & N. where, it is rumored, he lost a part of his sneezing outfit.

Wilmer C. Dutton, Sales Manager for the Tolhurst Machine Works at Troy, N. Y., had no exhibit at the Show, but was present looking over the prospects and studying Southern conditions during the entire week. Mr. Dutton expressed himself as being much pleased with the business prospects this section is holding out.

O. H. Johnson of Newberry, S. C., the Southern Representative of the Hockaday Company of Chicago, was greeting his many personal friends during the week.

S. J. Webb of New Orleans, La., was representing the Bradley Stencil Machine Company of St. Louis, and in charge of their exhibit.

A. D. Lamson of the Drexel Building, Philadelphia, Pa., represented the Safepack Paper Mills of Boston.

W. T. McLeod, Manager of the Alexander Bros. Atlanta Office, was in attendance at their belting exhibit.

John W. Sayres, Sales Manager in charge of the Richmond office of the Certain-teed Products Corp., was one of the visitors of note during the week of the Show.

Daniel O. Ferris, representing the Electro Bleaching Gas Company, 18 E. 41st Street, New York City, manufacturers of liquid chlorine, was one of the visitors at the Show during the week.

It was at night at the Ottaray. A semblance of quiet had settled on the long corridors and only the faint sound of distant singing could occasionally be heard. A dark form tiptoed to a certain room almost immediately followed by another. Sounds of a scuffle ensued—the bed creaked—a chair was overturned—then a dull crash and a plaintive masculine voice saying "Look at my pants! Just look at my pants! Frank, I didn't know you were such a roughneck." And a faint strange odor permeated the midnight atmosphere reminiscent of other days.

A. A. Underwood of the Frank Mossberg Company, Attleboro, Mass., took charge of the Mossberg exhibit and compared New England and Carolina weather.

A Boston man present was exhibiting a photograph of a pair he drew about sixteen months ago. Some of his friends suggested that if he would get three of a kind to go with them he would have a full house.

Edward B. Smith was again in charge of the exhibit of the Whitinsville Spinning Ring Company of Whitinsville, Mass.

Rogers W. Davis was kept busy greeting his many friends at the exhibit of the Saco-Lowell Shops.

J. W. Grayson, the Sales Manager of the National Scale Company, Chicopee Falls, Mass., was in attendance at his interesting exhibit and, incidently, aiding the Red Cross whenever the occasion offered.

R. E. McCausland, Field Manager for the Barber-Colman Company, of Rockford, Ill., thinks some of the southbound trains are misnamed. The one on which he arrived in Atlanta en route to Greenville was twenty-seven hours and twenty minutes late. However, as long as it finally brought him to Atlanta he was thoroughly satisfied.

W. B. Anderson, Manager of the Boston office of the Barber Colman Company was another out of town representative of the company who was present at the show.

J. Henry Thorpe of the U. S. Bobbin & Shuttle Company, Providence, R. I., was among the New England visitors at the Show.

George and Buzz were again the heavyweights of the exhibition.

James B. Fitch, Manager of the D. D. Felton Brush Co., Atlanta, Ga., was in attendance the early part of the week.

"Meet me at the church," was the slogan of the Greenville Show.

Arthur W. Harris, Southern Representative of the American Warp Drawing Machine Company, with offices in the Hurt Building, Atlanta, was in personal charge of the exhibit of this company.

Edwin H. Marble of Curtis & Marble, Worcester, Mass., slipped away from his business cares long enough to be present at the Show and greet a number of his old friends. Mr. Marble has been doing a great deal of government work recently in addition to his regular duties.

W. R. Stimson, Agent of the Draper Corporation, Hopedale, Mass., spent the entire week at the Exposition in attendance at their exhibit.

T. E. Conner had charge of the exhibit of the Foster Machine Company of Westfield, Mass. Mr. Conner is well known in the South and is a regular attendant at all the Expositions. He was assisted by R. Q. Ford, another member of the organization, and John Hill, the Southern Representative from Atlanta.

F. G. Hall of Stein, Hall & Co., 61 Broadway, New York City, personally attended the exhibit of his company, which not only featured many kinds of starch, but also their well known royal tapioca flour. He was assisted by W. A. Boyd and L. W. Peabody.

Frederick Jackson, the Southern Agent of the Universal Winding Company of Boston with offices at Charlotte, N. C., spent a part of Exposition week in Greenville.

W. C. Waldo of the Veeder Manufacturing Company, Hartford, Conn., took personal charge of the very interesting Veeder exhibit and expressed himself as being much pleased with the interest it aroused among the mill men visiting his booth.

D. W. Peabody and Harry S. Roberts representing the Mill Power Department of the Atlanta Office of the General Electric Company were among those present at Greenville.

Wayland B. Pickard, Agent of the Indian Head Mills of Alabama at Cordova, Ala., was present at the Show for several days.

Superintendent George S. Harris and Purchasing Agent John S. Horsley of the Lanett Cotton Mills, West Point, Ga., spent several days in Greenville attending the Exposition.

Among other representatives from this section were Superintendent I. B. Morris of the West Point Manufacturing Company at Langdale and Superintendent O. G. Murphy of the Shawmutt Mill of the West Point Manufacturing Company.

W. E. Johnson, Agent of the Talassee Mills at Tallassee, Ala., was another prominent Alabama cotton mill man to be present.

Superintendent William Parker, Jr., and C. H. Brumby of the Standard Cotton Mills, Cedartown, Ga., were among the visitors calling at COTTON'S booth.

Superintendent H. B. Miller of the Ensign Cotton Mills, Forsyth, Ga., spent several days at the Show.

L. H. Beck, General Superintendent of the Georgia Cotton Mills, at Griffin, Ga., was in Greenville during the early part of the week.

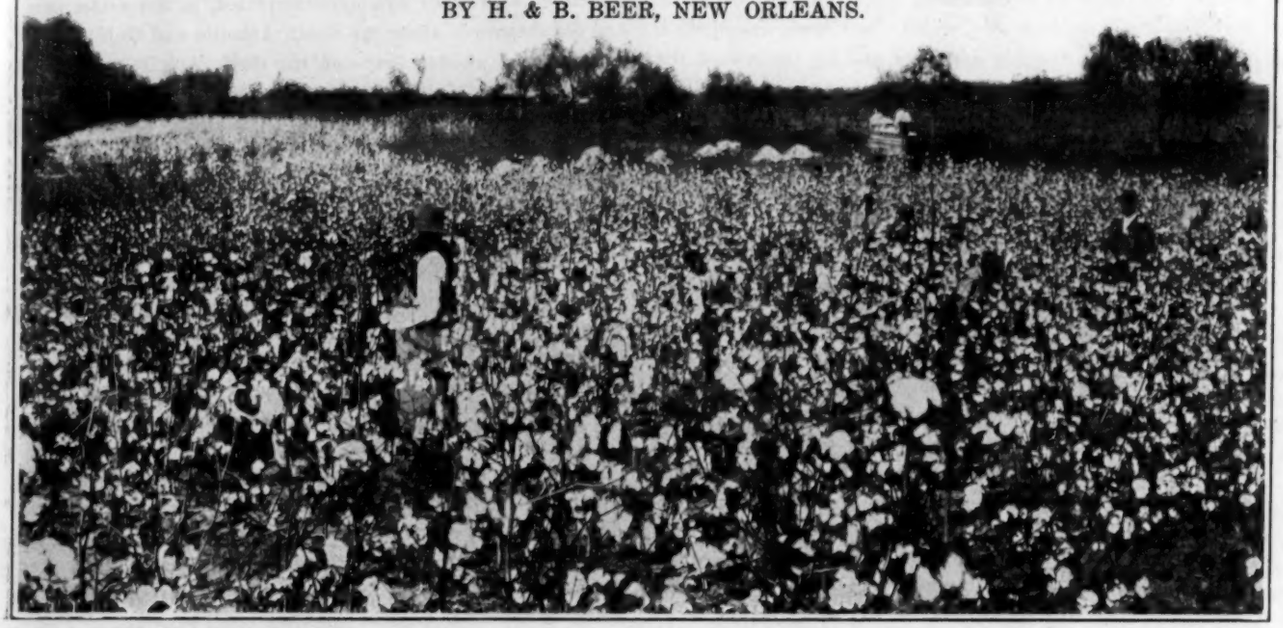
J. A. Baugh, Jr., Agent at the International Cotton Mills at LaGrange and Hogansville, Ga., made a long visit at the Exposition. He was accompanied by Mrs. Baugh.

President Howard T. Park of the Park Cotton Mills, LaGrange, was stopping at the Ottaray during Show week.

(Continued on page 233.)

A Review of the Year in Cotton

BY H. & B. BEER, NEW ORLEANS.



BEFORE THE WAR.

During the sixty years following the unpleasantness between the states, the Southern States made slow progress in an industrial way except in cotton textiles, iron and coal, and these developments were confined mainly to the South Atlantic States, Alabama and Tennessee. The lower Mississippi Valley States and the Southwestern States, including the empire state of Texas and the major portion of the Southeastern States, were devoted to agriculture almost exclusively; cotton being the principal product under cultivation.

As a result of the one crop policy, cotton being the main crop, the South was obliged to spend millions of dollars annually in the North and West for food and feedstuffs, provisions, etc., all of which could have been raised to an economic advantage at home. In other words nearly all of the money made in the growing of cotton was paid to the West and North for grain and meat.

In consequence the Southern planter, as a rule, was generally in debt because the price of cotton generally averaged comparatively low compared with the cost of production and the relative high cost of foodstuffs, etc. From 1876, or shortly after the civil war, the price of cotton remained under the 15 cent level except in 1909 and 1910 when a temporary flurry was witnessed, and in most years the price of the staple was below the 10 cents level, in numerous seasons selling below 8 cents and in several years dropped to 5 and 6 cents, or below the cost of production. These were the fruits of the one crop idea that prevailed in the Southland.

Not realizing that the one crop idea was the cause of their misfortune, the farmers blamed the Exchanges for their trouble, claiming that speculation was responsible for the low price of the staple, when, as a matter of fact, the overproduction of cotton was the real cause. Accordingly they fostered legislation in nearly all of the Southern States whereby anti-futures laws became effective, preventing the operation of Exchanges in many Southern States.

In the meanwhile the boll weevil, which invaded the United States by way of extreme Southwest Texas in the lower Rio Grande Valley, in 1892, was gradually working eastward, having reached the Mississippi Valley States in 1906, and while they did untold damage to the crop, reducing the production by millions of bales, their coming was a blessing in disguise, as the weevils forced the farmers to diversify their crops by planting less cotton and more grain. Unwittingly the planters thought they had solved the problem of low prices. The anti-futures laws were in force in most of the Southern States, restricting trading, and diversification was the order of the day. But the day of reckoning was yet to come.

DURING THE WAR.

The unexpected breaking out of the European war in August 1914 found the South unprepared for the change in commerce that it was to bring. Prospects were for a big cotton crop, eventually proving to be a record yield— 16,738,000 bales. Prices commenced to decline rapidly, and in order to protect the interest of all concerned, the future markets were closed from August until November of the same year, or for a period of five months.

In the absence of speculation, by reason of the Exchanges being closed there was no buying to absorb offerings and there was no market in which to hedge, as a result farmers were at the mercy of domestic and foreign spinners. The crisis was on, spot cotton, basis of middling in New Orleans dropped from 13-5/16 on July 30th, 1914, to 6½ cents in October, selling much lower in the interior.

In view of the fact that the Exchanges were closed during the long period when the big decline in spots occured, the contention of the farmers that the Exchanges were responsible for the low price of cotton then existing as in the past, was without foundation. Eventually, in

November of the same year, 1914, the New Orleans and New York Cotton Exchanges reopened. After their opening, prices ruled irregular for a short while, but when the market recovered its equilibrium, the Exchanges began to perform the functions for which they were established. Prices slowly but steadily advanced and by the end of the season, or by the close of July, 1915, the price of middling was up to 8.69; one year later up to 13.13, and reached 24.75 at the close of July 1917, while to-day it is quoted at about 29 cents, the highest level witnessed since 1869, or for nearly 50 years.

The depressing effect on the price of the staple as result of closing the Exchanges, and the optimistic influences that came from the reopening of the Exchanges, helping the market to advance from a price that was below the cost of production, to the highest level in almost a half century, was proof sufficient that the Exchanges were of much benefit to the trade, the producer in particular. To-day the Exchanges have no better friends than the farmers, who, prior to the war, were their enemies for want of better knowledge of their operation and the functions they perform. Of late the sentiment in the South has been in favor of rescinding the anti-future laws in many of the cotton growing states. This has already been done in Alabama and Oklahoma, with prospects of the same action being taken soon in Texas, and the probability of the other states following suit.

Of course the decrease in the cotton acreage and an increase in the grain area in the Southern States, coupled with the absence of German potash and scarcity of labor, and an urgent demand for cotton goods from the warring allied nations, was responsible in no small measure for the big advance in the price of cotton the past couple of years. Nevertheless, the fact remains that shortly after the Exchanges were reopened in November, 1914, the value of the staple advanced in the face of the making of the largst crop on record.

Although prices are high now, higher than they have been in nearly 50 years, indications are that prices will be higher still eventually. The discarding of the one crop, all cotton, idea, and the growing of more grain, the raising of more hogs and cattle in the South, has placed the cotton farmer in an independent financial position, and the farmers patriotic spirit, responding to the appeal of President Wilson to raise big crops of foodstuffs for home consumption and for export to help feed the American forces abroad and our allied nations, served to keep the cotton acreage from increasing, and will likely tend to keep the cotton acreage down to a reasonable area in 1918 notwithstanding the very high prices prevailing for the staple and the cotton seed, as will the presence of the weevil and the absence of potash fertilizer, without which it is almost impossible to produce a full yield per acre in the South Atlantic States and in Alabama. Therefore, we still entertain a favorable opinion of the market and anticipate higher prices next spring and summer.

All sectional political feeling having disappeared in the United States as result of the European war, every section of the country doing its best to help America and her Allies win the war, the unlimited resources of the South are being developed by the government and by individual effort. In other words, the South, so long neglected by capital and for political reasons in the past, is gradually coming in to its own. There is an enormous demand for its timber, coal, iron and cotton. Wooden and steel ships are under construction, with many more contemplated, in numerous new and old shipyards along the South Atlantic and Gulf coasts. The building of steel ships on the Gulf coast is something new and of much importance for this section.

The raising of cattle in the Gulf states is increasing with leaps and bounds, especially in Louisiana, Mississippi and Alabama, and promises to expand more rapidly in the future. It is realized that there is no section of the country so well adapted for cattle raising as the Gulf states by reason of the mild climate, plenty of water, no prolonged drouths, and grazing being possible throughout the year, which is quite an economic feature in these days of very high cost of feedstuffs. Packing houses and modern creameries are appearing in increasing numbers, and the products are as good, if not superior to the products of the West.

AFTER THE WAR.

When the blessings of peace return to the world, victory, we trust, will be that of the Allies, with the help of Providence. In that event the United States will have taken an enviable position among the nations of the earth; strongest financially, industrially, agriculturally and commercially, standing second to none in efficiency in all branches of trade, and backed by a war-made navy and merchant marine that the nation may well be proud of.

The South is destined to play an important role in the reconstruction of devastated Europe, France, Belgium, Italy and the Balkan States will need her help and material. Much of the material to be used, if not the major portion, is to be found in unlimited quantities in the Southern States. Iron, coal, timber, etc, with food and clothing for the masses, to replendish empty bins and shelves, can and will be provided.

Louisiana is to share largely in this great trade demand of the future. With millions of acres of virgin forests, the growing of large cotton crops again in this State, despite the weevil, its large production of sugar, rice and corn, Europe will find here a supply of necessities that can not be duplicated in any other state of the union, or, for that matter, in the world. New Orleans, the key or gateway to the Great Mississippi Valley, the most fertile and productive region in the world, with its miles of modern docks, possessing the largest and most modern cotton warehouse in existance, the world's largest of grain elevators, modernly equipped, and with a land-locked harbor of fresh water, deep and broad enough for the navies of the world to ride at anchor, is anxiously awaiting the day when the war-ridden countries of the world are once more open to commerce.

By reason of having its own Public Belt Railroad, by which cars may be shifted to place freight shipside at a minimum of expense and with dispatch, the Port of New Orleans, from a point of efficiency, is unsurpassed.

In a word, the "Crescent City" is prepared, after many years of endeavor, and at a great cost in money, to take care of all the trade that is to come this way for shipment to Europe and South America, or for Asia via the Panama Canal. Already ports on the North Atlantic are congested. Europe, of necessity, must look to America, the South in particular, for her requirements after the war, and its wants will be urgent and of great magnitude.

Annual Review of the New Bedford Mill Stock Market

BY SANFORD AND KELLEY.*

Never have New Bedford corporations, taken as a whole, had such a year of prosperity as in 1917. As a result the disbursements to stockholders owning shares in local corporations have been very liberal, but in no case has anywhere near the total earnings been paid out. In the case of our cotton mills a very conservative policy has been adopted since the price of cotton was so high it took more liquid capital to carry on business than has been necessary since the Civil War. Money rates have been high and capital scarce which was another reason for the mill managements holding back a large part of this year's earnings for use in the business.

The prosperity in the textile mills was general throughout New England. Fall River in particular benefited by the large demand for print cloths and other coarse goods. During the last six months quite a large percentage of the machinery in Fall River mills was devoted to government contracts. This was true also of many of the large mills in New Bedford such as the Wamsutta, Nashawena and Dartmouth.

The yarn mills have made even larger profits per spindle than the cloth mills, due in a large measure to the tremendous demand for automobile tire yarns and the impossibility of constructing new mills except at a cost of nearly double the amount they would have cost four or five years ago.

Profits of the cotton mills in some cases have run well over $50 a share on the common stocks, so that large sums have been accumulated in quick assets. Today no cotton mill in New Bedford has a debt on its plant although in our statistics the New Bedford Cotton Mills Co. and the Neild Mills show small debts, which is the result of the figures being taken from balance sheets now about a year old.

As New Bedford mills were never so wealthy as they are today, we would expect to see their shares at the highest prices ever reached, but such is not the case. Some of them are lower as a result of stock dividends declared. On the other hand, some are lower even than in 1909 although values are 50 per cent greater. This can be accounted for in only one way—the general unsettlement in all investment markets by the war. When owners of mill stocks see all railroad shares at the lowest levels in years, they sometimes do not take into consideration the values and earning power underlying their mill stocks, and sell these to buy listed securities which have had a big decline. American Telephone & Telegraph Co. stock, for instance, below par appeals tremedously to the New England investor, and with money scarce there has naturally been considerable selling of un-

*Dealers in stocks and bonds, New Bedford, Mass.

Financial Statements of New Bedford Cotton Mills, to Dec. 31, 1917, Compiled by Sanford and Kelley.

	ASSETS				LIABILITIES				
Date of Statement	Bldgs. and Machinery Real Estate	Inventory	Cash and Accts. Rec.	Name of Corporation.	Capital Stock and Bonds.	Bills and Accts. Payable.	Profit and Loss Dep. & Res.	Surplus of Quick Assets.	Net Debt on Plant
Sept. 29, 1917	$ 1,597,062	$ 571,824	$ 440,861	Acushnet Mill Corp.	$1,500,000	$64,162	$1,045,585	$948,523	.....
Dec. 4, 1916	519,142	586,713	625,540	Beacon Mfg. Co., Com.	400,000	326,000	605,395	886,253	.....
				" " " Pfd.	400,000	.....	.....	.....	.....
Dec. 31, 1916	1,544,502	498,677	208,442	Booth Mfg. Co., Com.	500,000	170,777	345,844	36,342	.....
				" " " Pfd.	735,000	.....	.....	.....	.....
				" " " Bonds.	500,000	.....	.....	.....	.....
Sept. 29, 1917	1,251,092	503,427	219,800	Bristol Mfg. Co.	1,000,000	456,994	517,325	266,233	.....
Sept. 30, 1917	2,413,237	399,573	206,429	Butler Mill, Com.	1,500,000	109,039	660,202	496,963	.....
				" " Pfd.	750,000	.....	.....	.....	.....
Dec. 30, 1916	1,005,559	447,031	310,045	City Mfg. Co.	750,000	530,889	481,746	226,187	.....
Nov. 26, 1917	3,394,195	1,093,078	1,241,542	Dartmouth Mfg. Co., Com.	2,000,000	7,000	2,421,815	1,627,620	.....
				" " " Pfd.	600,000	.....	.....	.....	.....
				" " " Bonds.	700,000	.....	.....	.....	.....
June 30, 1917	3,275,000	1,033,576	793,265	Fairhaven Mills, Com.	1,500,000	965,441	636,399	861,400	.....
				" " Pfd.	2,000,000	.....	.....	.....	.....
Dec. 30,1916	1,826.714	739,821	153,819	Gosnold Mills, Com.	825,000	636,546	433,808	257,094	.....
				" " Pfd.	825,000	.....	.....	.....	.....
Sept. 30, 1917	1,500,000	653,367	810,086	Grinnell Mfg. Co.	1,500,000	224,928	1,238,525	1,238,525	.....
Sept. 29, 1917	1,498,900	665,868	515,570	Hathaway Mfg. Co.	1,600,000	82,244	998,094	1,099,194	.....
Dec. 31, 1916	1.779,180	480,085	221,511	Holmes Mfg. Co., Com.	600,000	270,171	1,010,605	431,425	.....
				" " " Pfd.	600,000	.....	.....	.....	.....
Sept. 30, 1917	1,804,826	633,725	497,286	Kilburn Mills.	1,500,000	403,733	1,032,102	727,278	.....
Dec. 30, 1916	3,556,899	2,535,000	702,792	Manomet Mills.	2,972,900	2,110,283	1,711,508	1,127,509	.....
Dec. 31, 1916	3,978,827	1,295,672	720,384	Nashawena Mills.	3,000,000	1,719,211	1,275,672	296,845	.....
Jan. 1917	500,000	126,252	121,781	Nemasket, Com.	300,000	104,147	43,886	143,886	.....
				" Pfd.	300,000	.....	.....	.....	.....
Dec. 31, 1916	1,699,017	497,849	101,196	N. B. Cotton Mills Corp., Com.	350,000	244,926	537,135	.....	61,881
				" " " Pfd.	750,000	.....	.....	.....	.....
				" " " Bonds	416,000	.....	.....	.....	.....
Dec. 31, 1916	1,328,465	500,342	120,116	Neild Mfg. Co., Stock.	800,000	398,019	500,904	.....	27,561
				" " " Bonds.	250,000	.....	.....	.....	.....
Feb. 27, 1917	3,465,595	1,337,506	669,082	Nonquitt Spinning Co.	2,400,000	1,770,072	1,302,111	236,516	.....
Nov. 6, 1917	1,348,606	795,387	80,202	Page Mfg. Co.	1,000,000	503,000	721,195	372,589	.....
Dec. 30, 1916	1,451,570	2,745,467	876,080	Passaic, 1st Pfd.	693,000	2,918,818	541,999	702,729	.....
				" 2nd Pfd.	719,300	.....	.....	.....	.....
				" Com.	200,000	.....	.....	.....	.....
Mar. 31, 1917	965.540	479,716	80,873	Pierce Bros., Ltd.	700,000	508,472	371,657	52,117	.....
Dec. 31, 1916	618,881	1,417,498	285,832	Pierce Mfg. Co.	600,000	425,471	1,296,740	1,277,859	.....
June 30, 1917	1,110,221	696,638	320,003	Potomska Mills.	1,200,000	17,597	909,266	999,044	.....
Dec. 31, 1916	2,167,362	848,375	514,856	Quissett Mills, Com.	1,250,000	742,719	1,145,374	533,012	.....
				" " Pfd.	305,090	.....	.....	.....	.....
				" " Bonds.	87,500	.....	.....	.....	.....
Dec. 30, 1916	2,674,601	1,860,164	444,341	Sharp Mfg. Co., Com.	1,250,000	1,746,431	782,675	558,074	.....
				" " Pfd.	1,200,000	.....	.....	.....	.....
Dec. 30, 1916	1,699.936	560,438	133,279	Soule Mill.	1,260,000	617,315	516,338	76,402	.....
Dec. 30, 1916	1,678,607	204,580	193,451	Taber Mill.	1,250,000	195,247	631,392	202,784	.....
Sept. 30, 1917	2,325,000	2,813,518	521,316	Wamsutta Mills.	3,000,000	489,026	2,170,808	2,845,808	.....
Dec. 30, 1916	2,937,231	1,221,912	339.391	Whitman Mills.	2,000,000	871,025	1,627,509	690,278	.....
	$56,915,767	$26,243,079	$12,469,171		$50,538,700	$19,629,703	$27,459,614	$19,218,489	$89,442

listed shares to buy other securities. The net result is that greater values exist today in New Bedford mill shares than has ever been the case before.

As for the outlook in regard to prices of mill stocks the coming year, the situation is much more difficult to analyze than usual because of the war. There can be no question but what current prices are low and we have been through a drastic financial liquidation. In this country today prices of securities are relatively lower than they have ever been except in times of panic. Always in the past, values have told in the long run and there is no reason to believe it will be otherwise this time. We do not expect any marked upward movement so long as the war continues. Cotton mill corporations, however, are in a relatively stronger position than ever before and purchases made for cash at this level are bound to prove profitable if held until normal conditions again exist.

In like manner the returns to owners of New Bedford mill shares are bound to be liberal the coming year as these corporations already have orders at profitable figures some months in advance, and the war necessarily will keep our mills busy. After the war there is bound to be a greater export trade than ever before owing to better banking and shipping facilities, particularly in South America and South Africa. Ground work plans are already being made for this trade on a larger scale than most of us realize.

Last year in our annual statistics, we predicted what the stockholders of our different cotton mills were likely to receive in the way of dividends and we take great pleasure in stating that these predictions, in every instance, came true in almost every respect. This year with the unsettled financial and investment conditions, together with the excess profit law and the possibility of further legislation resulting from the necessities of the great war, we can hardly predict with the same confidence. In a general way, however, we will undertake to outline what may possibly come to pass in the way of dividends.

The stockholders of the Acushnet Mills, as the mill owes no money and with business so good, ought to receive extra cash dividends as large as they did the past year with the exception that they will not receive a stock dividend which in 1916 was given to the amount of 50 percent.

At the Booth Manufacturing Company the Preferred stockholders can look forward with confidence to the fact that they will receive 12 per cent again this year, 6 per cent being the regular payment called for and 6 per cent will probably be paid towards the back accumulated dividends. We do not believe that there will be any disbursement made on the Common stock as the amount of back accumulated dividends is still considerable and, under present conditions, the mill is not likely to undertake to pay those all off because of the difficulty in making any new financial arrangements that are not absolutely necessary.

At the Bristol Mill the financial condition is better than it has been for years and a fine management is now in control and unhampered by dissension on the part of stockholders such as has been the case for many years back. The Bristol was one of the few New Bedford mills to reduce its actual amount of loans outstanding during the past year in spite of the increased cost of doing business because of high cotton. For this reason, there is a possibility that the dividend may be increased since earnings are so large and the outlook so much improved.

Extra dividends can also be looked forward to on the part of the stockholders of the City Manufacturing Com-

NEW BEDFORD COTTON MILL STATISTICS COMPILED BY SANFORD AND KELLEY.

Name.	No. Mills	Capital.	Bonds.	Spindles.	Looms.	Employees.	PRODUCT.
Acushnet Mills	3	$1,500,000	.....	110,000	3,500	1,300	Sheetings, Twills, Cotton and Silk Goods.
Beacon Mfg. Co. Com	3	400,000	.....	11,184	....	1,250	Blankets and Napped Goods.
Beacon Mfg. Co. Pfd		400,000	.....	.....	....	.....	
Booth Mfg. Co. Com	2	500,000	$500,000	51,424	1,300	600	Plain, Francies and Silk Goods and Novelties.
Booth Mfg. Co. Pfd		735,000	.....	.....	....	.....	
Bristol Mfg. Co	1	1,000,000	.....	67,000	1,876	750	Cotton and Silk Goods, plain and fancies, and Novelty Constructions.
Butler Mill Co. Com	1	1,500,000	.....	105,000	2,000	1,100	Fine Cotton, plain and fancies, Yarns.
Butler Mill Pfd		750,000	.....	.....	....	.....	
City Mfg. Co	2	750,000	.....	59,004	Yarn		Carded and Combed Yarn from Peeler, Egyptian and Sea Island Cotton.
Dartmouth Mfg. Corp. Com	3	2,000,000	700,000	200,000	5,700	2,200	Plain, Fancy and Jacquard Cotton and Silk Goods.
Dartmouth Mfg. Co. Pfd		600,000	.....	.....	Yarn	.....	
Fairhaven Mills Com	5	2,000,000				2,200	Spinners of Combed and Carded Yarn, Egyptian and Sea Island Specialties.
Fairhaven Mills Pfd		1,500,000	.....	200,000	....	.....	
Gilt Edge Silk Mill	1	10,000	.....	930	128	90	Dress Silk Goods for High Grade Cloaks.
Gosnold Mills Co. Com	2	825,000	.....	77,488	3,198	1,040	Fine Goods, plain and fancies, Jacquards, Silk and Cotton Mixtures.
Gosnold Mills Co. Pfd		825,000	.....	.....	....	.....	
Grinnell Mfg. Co	3	1,500,000	.....	126,000	3,135	1,100	Fine Cotton Goods, plain and fancies and with silk filling.
Hathaway Mfg. Co	2	800,000	.....	109,892	3,700	1,400	Fine Cotton and Silk Goods.
Holmes Mfg. Co. Com	1	600,000	.....	69,552	Yarn	1,200	Fine Combed Yarns, Gassed, Mercerized, Bleached and Dyed, Commercial Mercerizing.
Holmes Mfg. Co. Pfd		600,000	.....	.....	....	.....	
Kilburn Mills	2	1,500,000	.....	126,032	Yarn	1,250	Combed Cotton Yarns.
Manomet Mills	3	3,000,000	.....	204,000	Yarn	2,400	Combed Cotton Yarns.
Nashawena Mills	2	3,000,000	.....	157,000	3,820	1,800	Plain and Fancy Cotton and Jacquard Silk Novelties.
*Nemasket Mills Com	1	300 000					
Nemasket Mills Pfd		300,000	.....	30,000	Yarn	250	Spinners of Combed and Carded Yarns, Egyptian and Sea Island Specialties.
N. B. Cotton Mill Corp. Com	1	350,000	350,000	73,000	1,400	680	Fine Cotton Goods, plain and fancies.
N. B. Cotton Mill Corp. Pfd		750,000	.....			.....	
Nelid Mfg. Corporation	1	800,000	250,000	58,000	1,500	500	Plain and Fancies, Silk and Mercerized Specialties.
Nonquitt Spinning Co	2	2,400,000	.....	195,000	Yarn	1,400	Combed Cotton Yarns.
Page Mfg. Co	1	1,000,000	.....	64,000	1,742	600	Fancy Cotton and Silk Goods.
Passaic Cotton Mills Com	8	200,000	.....	156,028	†1,000	4,326	Tire Fabrics and Specialties.
Passaic Cotton Mills 1st Pfd		693,000	.....				.....
Passaic Cotton Mills 2nd Pfd		719,200	.....				.....
Pierce Mfg. Co	2	600,000	.....	116,008	3,516	1,200	Fancy and Fine Cotton and Silk Goods.
Pierce Bros. (Limited)	1	700,000	.....	53,000	1,300	500	Fine Combed Yarn Cloths.
Potomska Mills	3	1,200,000	.....	121,900	2,824	1,200	India Linens and Lawns, and Fancies.
Quissett Mill Com	1	1,250,000	87,500	86,000	Yarn	800	Spinners of Combed and Carded Yarns, all Plys and Descriptions, Egyptians and Sea Island Specialties.
Quissett Mill Pfd		305,000	.....	.....	....	.....	
Sharp Mfg. Co. Com	2	2,500,000a	.....	200,000	Yarn	2,000	Fine Combed Yarns.
Sharp Mfg. Co. Pfd		1,200,000b	.....	.....	....	.....	
Soule Mill	1	1,200,000	.....	93,000	2,300	900	Lawns, Organdies, Sateens, Dimities, Lanos and Fancies.
Taber Mill	2	1,200,000	.....	70,720	1,800	700	Fancy Goods and Lawns, Novelties in fine goods and Silks.
Wamsutta Mills	6	3,000,000	.....	229,000	4,300	2,200	Bleached and Brown Sheetings, Shirtings, Lawns, Sateens, Fancies and Yarns.
Whitman Mills	2	2,000,000	.....	178,000	4,932	2,000	Finest Plain and Fancy Cotton Goods; also Cotton and Silk Mixtures.
	72	$49,022,300	$1,893,500	3,392,172	55,471	37,236	
						.....	

*Located in Taunton, but owned in New Bedford.
†In both Passaic and New Bedford.
aWhen all paid up.
bNot counting stock converted into common.

pany as this yarn mill has now gone a considerable ways towards paying up the loans incurred by the purchase of such a tremendous amount of new machinery a few years ago. To be sure, they have been liberal in the disbursements to the stockholders during 1917 but what was paid out was but a very small percentage of the earnings and the balance was applied to reduction of loans and additional working capital. The management is a very good one and conservative and the outlook for the future of the corporation was never better from the manufacturing standpoint.

At the Dartmouth Mills, Mr. Langshaw has again startled the investing public by the size of the cash dividends given during the year 1917, these having amounted to 42 per cent, and when it is considered that the Dartmouth Common stockholders have been handed in years back many stock dividends, one can better realize what an enormous return this corporation is making on the original invested capital. With such a record of success, there is every reason to believe that next year dividends will be very large on the Dartmouth Common stock for the outlook for profits is exceedingly good and, as the Dartmouth has no oustanding indebtedness, there is no reason it should not be passed along in the form of cash to the owners of its shares.

A very large, new corporation has been organized in New Bedford during 1917 by name, the Fairhaven Mills Company. This corporation with its 200,000 spindles has made a wonderful record in the way of earnings and will finish the year 1917 with a surplus of quick assets of over a million dollars. As the corporation was new and the stock not entirely digested, the shares are selling on a lower basis per spindle when earnings are considered as well, than most any of our well managed cotton mills. With such a comfortable financial position and such large earnings, it would seem as though the management ought to distribute, before the end of 1917, something more than 6 per cent on its Common stock, the latter rate being what has been paid quarterly since the corporation was formed. We think the Fairhaven Mills shares one of the best purchases that exist in mill shares today, and this, too, when taking the abnormal conditions into consideration. When times again become normal and there is a tendency for investment securities to advance, we think the Common stock of the Fairhaven Mills will be one of the leaders.

Otis N. Pierce, the head of the Grinnell Mill has surprised its stockholders the last year by giving them a 10 per cent extra dividend in the shape of Liberty Bonds, and while the disbursement of this corporation in the past few years has been exceedingly liberal, there is good reason to believe that the year 1918 will see something more than the regular quarterly dividend as Mr. Pierce, we understand, has somewhat changed his attitude in the past few years in the direction of more liberality towards the owners of the stock.

The Gosnold Mfg. Co. has been in the hands of its new management now for about a year. Regular dividends at the rate of 6 per cent have been paid on both common and preferred. The year's earnings are by far the greatest the corporation has ever known, and as the preferred stock is limited to 6 per cent the amount available as earnings for the common has been very large. Nevertheless, in view of its having been in the present hands but a comparatively short time, the management has thought it advisable not to increase the common dividend. Should another year's business prove as profitable as the past it is difficult to see why the directors should not increase the disbursement to the common stockholders, as financially the corporation is very well fixed.

At the Holmes Mill a greater business in volume as well as price of product was sold than ever before. During certain periods of the year the Holmes ran nearly continuously night and day. This corporation has also added considerable construction during the past year which was paid for out of surplus earnings. The total profit for the year will probably be about the same as in the previous year when the Holmes showed more earnings for its common stockholders than any other corporation in New Bedford: that is, in percentage or dollars per share earned on outstanding common capital.

The owners of the Kilburn Mill shares were rather disappointed in the net return they received on their stock for the past year. To be sure the management declared an extra dividend of $2 in cash, making 8 per cent for the year and it declared another extra payable January 2, 1918 of $2. Nevertheless, considering the low capital and the previous record of the management, the Kilburn Mill stockholders felt that there was something more than they actually did receive due them because of the remarkable prosperity of the industry. The fact that the earnings were no larger this year in this mill is said to be due in a large measure to the fact that a long time contract was entered into a year and a half or more ago which took up so much of the manufacturing capacity of this plant, that the Kilburn was not able to secure as many of the new and more profitable contracts as other local yarn mills and for that reason, net profits per spindle were less. It is understood that the contracts are now completed and there is no reason that during 1918, the Kilburn should not do as well as other yarn mills and since they are in such a comfortable financial condition, the stockholders ought to receive more in cash dividends than they did in the year 1917.

This year, for the first time, the Manomet received the benefit of the production from its big new unit which is now running full and overtime. The demand for yarn has been so tremendous since this mill was completed, that it has proved an enormous earner and a great benefit to the corporation. The Manomet for years has paid 8 per cent but this year declared extra cash dividends in two quarters of 2 per cent, making 12 per cent for the year. It is probable that in 1918, disbursements will be as large if not larger.

The Nashawena is now on an 8 per cent basis and earnings in 1917 were larger than for the previous year and the management wiped out the debt on the plant so this corporation now enjoys a considerable surplus of quick assets and can, beyond question, continue its 8 per cent rate. It is understood that this corporation is doing a large amount of business for the United States government and has contracts extending well into the new year.

One of the most popular stocks for investors during the past year was that of the Neild Mill which several times increased its rate of dividend and enjoyed a very considerable rise in price, selling above 170 when the market was at its best. The Neild has a comparatively small capital of $800,000, and a most excellent management. Very little stock is available on the market in ordinary circumstances so great is the faith of the stockholders in John

Neild who is the executive head of the corporation. Dividends for the year 1917 totaled up to 18 per cent.

Results of operation at the Page Mill this year were earnings of about 20 per cent on the stock. While this sounds large and would be more than satisfactory in ordinary times, the results were not up to what might have been expected considering what many other mills did and, as a result, the Page stock declined to a price of 80 or practically the lowest at which it has ever sold. The dividend disbursed to the stockholders by this corporation was 6 per cent or slightly less than in the previous year. During the fiscal year, some changes were made in the management and it is to be hoped that, during the year 1918, as a result of these changes, there will be an increase in operating efficiency.

The Pierce Mill disbursed to its stockholders besides the regular 16 per cent an extra cash dividend of $25. It had been hoped by many of the shareholders that a stock dividend would be forthcoming as the mill was in a position to declare a stock dividend of 200 or even considerable in excess of this per cent in stock so much undercapitalized is the plant.

Another very popular stock in the local market in which transactions were probably the largest of any one corporation were the shares of the Quissett Common. In the matter of earnings, this corporation has a record that the very best may envy, not only for this year but for every year it has been in operation. The success is largely attributed to Thomas F. Glennon, who has executive charge of the corporation's affairs. It paid to its stockholders this year 25 per cent in cash dividends and the stock enjoys a wider and better market than most New Bedford stocks.

The year 1917 proved a banner one for the Sharp Manufacturing Company which got its big new mill into operation and had sufficient demand for its product to work overtime practically throughout the year. As a result of profits earned this year and previous years, it was possible to declare a large extra stock dividend amounting to 80 per cent on the outstanding Common. This corporation can now operate close to 200,000 spindles and turn out an enormous product for which it has a well established market. At the height of the boom in mill shares in 1917 and before the United States entered the war, the Common shares of this mill sold as high as 150 but declined later as a result of the stock dividend.

Transactions in Soule Mill stock this past year were not very large and there has been but little change in selling value. The lack of interest in these shares is somewhat accounted for by the fact that in previous years there has been some contention between large owners of the corporation's shares and several changes in corporation officials and directors. The dividend rate was unchanged at 6 per cent although earnings, particularly in the latter part of the year, were said to be very large and have allowed the corporation to pile up a considerable surplus of quick assets.

The Taber Mill stock was much more actively dealt in the past year than at any time in the past five years. This was largely due to the excellent showing the corporation made in the way of earnings and the fact that it now has practically paid off all its floating indebtedness or has on hand the cash to do so should they so desire. Another reason for the activity in the stock was the fact that the mill paid several extra cash dividends which brought the disbursements for the year up to $12 a share. As the company now owes so little money, it is only reasonable to suppose that if business continues good, as it bids fair to do at the present time, the management and directors will be liberal in making an extra payment to the stockholders in the coming year.

In the Wamsutta Mills for the past year, profits were better than have been enjoyed for almost a decade and consequently disbursements to stockholders were larger. The mill paid 12 per cent in dividends but this is only a little more than half of the profits of operation for the year. In spite of the increase in dividends, however, the price of the stock did not enjoy the rise early in the year that most local stocks participated in, in fact at one time the stock sold the lowest in a good many years. The contrary movement in the stock was due to the realization on the part of investors that at the Wamsutta Mills, for a good many years back, the profits per spindle or unit of operation have not been as large as they should have been when compared with other corporations doing a similar line of business. In the same way, while the operations for the year 1917 were more profitable than they had been for sometime, they do not compare favorably with what has been accomplished by most of our other corporations under similar conditions. In the case of the Wamsutta, however, it should be remembered that the corporation has a tremendous surplus of quick assets and owes little money, and should more efficient management once be established, the returns to the stockholders would be much larger than they have been in the past ten years.

One of the surprising things in our local mill share market during the year 1917 was the surprisingly small advance that Whitman Mills made as compared with some of the other prosperous fine goods corporations. It is probable that in the years 1916 and 1917, this corporation will have earned not far from the total amount of its outstanding capital so that its present market price of around 145 would seem to be very much lower than even present unfortunate conditions justified. If the earnings of the present year approach what stockholders anticipate, this corporation will have a tremendous surplus of quick assets at the time its annual balance sheet is issued which will be in February. The management has been liberal in the matter of dividends in 1917 and has declared several extras besides the regular quarterly rate of 2 per cent, and considering the large earnings which have piled up, it would seem as though as much or more would be expected in the year 1918.

New Bedford cotton manufacturing corporations paid during the year 1917 dividends aggregating $8,077,176. against $2,981,825. in 1916, an increase of $5,095,351. The following companies paid regular and extra dividends: Acushnet 8 per cent, 8½ extra and a stock dividend of 50 per cent; Beacon 6 per cent on Common and 6 per cent on Preferred; Booth 12 per cent on Preferred and nothing on Common; Bristol 5½ per cent; Butler 6 per cent on Common and 7 per cent on Preferred; City 8 per cent and 4¾ extra; Dartmouth 12 per cent and 30 per cent extra on Common and 5 per cent on Preferred; Fairhaven a new corporation began paying quarterly dividends May 15, at the rate of 6 per cent per annum paying for the nine months $4.50 per share on Preferred and Common stock; Gosnold paid 6 per cent on both Common and Preferred stocks;

Grinnell 5 per cent and 10 extra; Hathaway 10 and 18 extra also a stock dividend of 100 per cent; Holmes 12 per cent and 10 per cent extra on Common stock and 8 per cent on the Preferred; Kilburn 6 and 2 per cent extra; Manomet 8 per cent and 4 per cent extra; Nashawena 6 and 2 per cent extra; Neild 12 per cent and 6 per cent extra; Nemasket a new corporation began paying quarterly dividends October first at the rate of 8 per cent on Common and 7 per cent on Preferred paying for the quarter $2 on Common and $1.75 on the Preferred; N. B. Cotton Mills 6 per cent on Preferred; Nonquitt 8 per cent regular and 5 per cent extra; Page 5 per cent; Passaic nothing on Common and 7 per cent on first and second Preferred; Pierce 16 per cent and 25 per cent extra; Potamska 6 per cent and 7½ per cent extra; Quissett on Common 8 per cent and 20 extra and 6 per cent on Preferred; Sharp on Common 6 per cent and a stock dividend of 80 per cent on the Preferred stock 8 per cent; Soule 6 per cent; Taber 6 per cent and 9 extra; Wamsutta Mills 6 per cent and 6 extra; Whitman 6 per cent and 10 extra; Page 6 per cent.

All of New Bedford cotton manufacturing corporations paid dividends in 1917.

The average dividend paid in 1917 on the $49,022,300. Capital stock of New Bedford Cotton Mills was 16.47-100 per cent. The average dividend rate on the capital stock invested in New Bedford cotton mills for eleven years from 1907 to 1917 inclusive was 9.8-100 per cent per annum.

The corporations which increased their dividends in 1917 over those paid in 1916 follow: Acushnet 48½ per cent including stock dividend of 50 per cent; Booth on Preferred 9 per cent; City 6¾ per cent; Dartmouth on Common stock 21½ per cent; Grinnell 6 per cent; Hathaway 18 per cent cash and 100 per cent stock dividend; Holmes Common 2 per cent; Kilburn 2 per cent; Manomet 4 per cent; Nashawena 2 per cent; Neild 9½ per cent; Nonquitt 6½ per cent; Pierce 25 per cent; Potomska 7½ per cent; Quissett Common 20½; Sharp a stock dividend of 80 per cent on Common on the Preferred 2 per cent; Soule 2 per cent; Tabor 9 per cent; Wamsutta Mills 6 per cent; Whitman Mills 9½ per cent. Page reduced its dividend from 7½ per cent in 1916 to 6 per cent in 1917.

New Bedford dividend paying cotton mill corporations have averaged per annum for the past 10 years as follows: Acushnet 17¼ per cent; Beacon Common 5.85 per cent on Preferred, 5.85 per cent; Bristol 3.57 per cent; Butler Common 7.58 per cent; City 8.78 per cent; Dartmouth Common 35.78 per cent; Gosnold Preferred 6 per cent; Grinnell 18.9 per cent; Hathaway 21.8 per cent; Kilburn 9.53 per cent; Manomet 8.4 per cent; Nonquitt 6.7 per cent; Page 3.22 per cent; Pierce 20.3 per cent; Potomska 8.75 per cent; Soule 5.85 per cent; Wamsutta 6.6 per cent; Whitman 11.63 per cent; Butler Preferred for 4 years 7 per cent; Holmes Common for 5 years 11.5 per cent; Holmes Preferred for 7 years 7 per cent; Nashawena for 2 years 7 per cent; Neild for 5 years 8.25 per cent; New Bedford Cotton Mfg. Co. for 4 years 9 per cent; Quissett Common for 5 years 9.8 per cent; Quissett Preferred for 6 years 5¾ per cent; Sharp Common for 3 years 32.16 per cent; Sharp Preferred for 6 years 5.58 per cent; Tabor for 8 years 6.56 per cent.

A statement of New Bedford, Mass., leading corporations, showing dividends to shareholders in 1917 on capital invested follows:

Corporations	Capital	Rate	Amount
Acushnet Mills	$1,500,000	66½	$737,500
Beacon Mfg. Co., Com	400,000	6	24,000
Beacon Mfg. Co., Pfd	400,000	6	24,000
Booth Mfg. Co., Com	500,000	..	.....
Booth Mfg. Co., Pfd	735,000	12	88,200
Bristol Mfg. Corp	1,000,000	5½	55,000
Butler Mill	1,500,000	6	90,000
Butler Mill, Pfd	750,000	7	52,000
City Mfg. Corp	750,000	12¾	93,750
Dartmouth Mfg. Corp., Com	2,000,000	42	840,000
Dartmouth Mfg. Corp., Pfd	600,000	5	30,000
Fairhaven Mills, Com	1,500,000	4½	90,000
Fairhaven Mills, Pfd	2,000,000	4½	67,500
Gosnold Mills Co.,	825,000	6	49,500
Gosnold Mills Co., Pfd	825,000	6	49,500
Grinnell Mfg. Corp	1,500,000	16	240,000
Hathaway Mfg. Co	800,000	128	996,000
Holmes Mfg. Co., Com	600,000	22	132,000
Holmes Mfg. Co., Pfd	600,000	8	48,000
Kilburn Mills	1,500,000	8	120,000
Manomet Mills	3,000,000	12	360,000
Nashawena Mills	3,000,000	8	240,000
Neild Mfg. Co	800,000	18	144,000
Nemasket, Com	300,000		6,000
Nemasket, Pfd	300,000		5,250
N. B. Cotton Mills Co., Com	350,000	6	21,000
N. B. Cotton Mills Co., Pfd	750,000	6	45,000
Nonquitt Spinning Co	2,400,000	13	312,000
Page Mfg. Co	1,000,000	6	60,000
Passaic Mills, Com	200,000	..	.....
Passaic Mills, 1st Pfd	693,000	7	48,500
Passaic Mills, 2nd Pfd	719,300	7	50,351
Pierce Mfg. Co	600,000	41	246,000
Pierce Bros., (Limited)	700,000	6	42,000
Potomska Mills	1,200,000	13½	162,000
Quissett Mill, Com	1,250,000	28	350,000
Quissett Mill, Pfd	305,000	6	18,300
Sharp Mfg. Co., Com	2,500,000	86	1,104,475
Sharp Mfg. Co., Pfd	1,200,000	8	96,000
Soule Mill	1,260,000	6	75,600
Taber Mill	1,200,000	15	183,750
Wamsutta Mills	3,000,000	12	360,000
Whitman Mills	2,000,000	16	320,000
	$49,022,300		$8,077,176

The dividends paid by New Bedford cotton manufacturing corporations in 1917 on $49,022,300 capital amounted to	$8,077,176	16 47-100%
There was paid in 1916, on $40,675,000..	2,981,825	7 33-100%
Increase	$5,095,351	

Notes About Men You Know.

(Continued from page 218.)

of Mr. Anderson's family, together with Mrs. Stallworth and Dr. J. D. Mauldin, reached Mr. Stallworth, he was dead.

Mr. Stallworth was born and reared in Greenwood county, South Carolina, and when seventeen years of age became connected with the Pacolet Manufacturing Company, a big mill organization of Spartanburg, S. C. He remained in their employ eleven years, attaining substantial recognition of his ability. He then accepted a position with Sanders-Swan & Co., big cotton merchants, and remained with them two years.

Upon the completion of the million-dollar mill of the Pacolet people at New Holland in 1901, Mr. Stallworth was offered and accepted the general managership of the enterprise, which place he had held since. In 1903 he was made general manager and assistant treasurer of the Gainesville mill, a half-million dollar institution owned largely by local capital, and he has since held these two offices with that mill.

Mr. Stallworth had been a member of the Baptist church since boyhood, and had been superintendent of the Sunday school at New Holland for a number of years. Through his efforts and with an able corps of teachers, this has been made one of the greatest Sunday schools in the South. The grammar schools of this place have also felt the stimulating effects of his influence and received national recognition for their excellence.

He was forty-five years of age. In 1892 he married Miss Florence Griffith, of Gaffney, S. C., who survives him. He is also survived by two brothers, James and G. C. Stallworth, of Greenwood county, South Carolina, and one sister, Miss Sallie Stallworth, of the same county.

Mill Conditions and Market Reviews.

What the Southern Mills are Doing.

The hearing in the case of J. A. Summersett vs. The Parker Mills was completed last month before Judge Puerifoy at Columbia. Several other corporations including the Hampton Mills, Lockwood, Green & Co., and Hanover National Bank are named as defendants in the suit, which is the direct outcome of the sale of the Parker mills for the sum of $2,500,000. The case was heard by the master of equity before whom certain managers of the Parker mills testified that the mills were being run at a financial loss and that the sale of the mills at what they were then worth was imperative.

The witnesses placed the value of the mills in normal times at $7,500,000 and the owners are said to have carried $6,000,000 worth of insurance on the property in question. The complaint charges a conspiracy among the managerial heads to defraud the stockholders, stating that the fact that $1,400,000 of the indebtedness of the Parker mills was paid off the previous year is conclusive proof that the mills were being run on an advantageous financial basis. The complaint asks that Judge Puerifoy set aside the sale of the Parker mills by its manager to Lockwood, Green & Co. The hearing lasted two days, during which time the business of the mills was gone over from the time they began operation until the date of the sale. The decision in the case has not been announced.

Fire of unknown origin totally destroyed a warehouse of the Chiquola mills at Honeapath, Anderson county, S. C., on Dec. 20th, with an estimated loss of $85,000. Part of the 1,085 bales of cotton in the structure was saved.

The Couch Mills, Atlanta, recently incorporated with $1,000,000 authorized capital, will establish a plant of 108 looms with electric power drive, and the daily capacity will be 11,000 yards of cotton cloth. Practically all the machinery has been purchased and 150 operatives will be employed. There will be two buildings, 200x60 and 150x 50 feet, of brick mill construction, J. L. Denman being the engineer in charge.

Organization has been completed by the Texas Textile Co., Houston, and architects are now preparing plans for buildings. It is proposed to erect a 200x60-foot brick structure, to be equipped with machinery for a daily capacity of 2000 pounds of absorbent cotton and 1000 pounds of artificial silk. This company's capitalization is $250,000, and its officers are: B. N. Garrett, president; J. B. Bagley, vice-president; C. A. Lewis, secretary; Frederick Wide, manager.

E. S. Draper of Charlotte has been engaged as landscape architect for the Woodside Cotton Mills' development of 150-acre mill village development at Greenville, S. C. The improvements will include park developments and tree planting.

The Elberton (Ga.) Mfg. Co. has been sold by J. C. Plonk to the Hamilton-Carhartt Co., of Rock Hill, S. C., and will be operated as Hamilton-Carhartt Mill No. 3, with J. H. Bagwell as superintendent.

Contract has been awarded for building a 120 by 75 foot addition for the Belton (Tex.) Yarn Mills, which company will double its spinning capacity.

A charter has recently been granted to the Latham Mills, Inc., to be built at Greensboro, N. C., by J. E. Latham, Edward Latham, W. P. Biddle and others. The authorized capital stock is $250,000 and $100,000 has been subscribed. It is the purpose of the new corporation to build a cotton mill.

The new machinery recently installed by the Rex Spinning Co., Gastonia, N. C., consists of 22 cards, 12 combers, 10 speeders, and 16 twisters. These machines, it is understood, are to be housed in the new 130x150 foot addition, which has just been completed. The company has also built nine new five-room houses for its operatives.

The Board of School Commissioners, Mobile county, Alabama, has awarded contract to the Cement Products Co., Wilmington, N. C., to equip the majority of the rural schools in Mobile county with the "sanisep" sewerage disposal systems, manufactured by that company. This is one of the largest contracts of its kind that has ever been placed by any one county, and the Board of Commissioners is to be complimented on its decision to protect the health of the school children.

Among other recent installations of "sanisep" systems are the following:—Wake County Rural Schools, North Carolina; Southern Mfg. Co., Athens, Ga.; Arcadia Mills, Spartanburg, S. C.; Nims Mfg. Co., Mt. Holly, N. C.; Barrow County Cotton Mills, Winder, Ga.; United States Coal & Coke Co., Gary, W. Va.; Crystal Block Mining Co., Welch, W. Va.; Greensburg-Connellsville Coal Co., Greensburg, Pa.; H. C. Frick Coke Co., Palmer, Pa.; Bessemer Coal & Coke Co., Pittsburgh, Pa.; Clinchfield Coal Corporation, Dante, Va.

There is a new cotton mill addition to be built at Charlotte, N. C., by the Fidelity Manufacturing Company, it is said. The exact capacity has not yet been stated, but it is understood that it will be about 100 looms with sufficient carding and spinning to furnish these with yarns for the manufacture of duck. The company now manufactures damasks and yarns, and has an equipment of 1,000 spindles and 50 wide looms.

The Tipton Cotton Mills, Covington, Tenn., is building an addition to its plant, upon which work is rapidly progressing. It is understood that the company is contemplating changing over from the production of sheetings to the manufacture of cotton yarns.

The Cleghorn Mills Company of Rutherfordton, N. C., is constructing a welfare house as the civic center for the people of the mill village. Work of this character has been conducted in temporary quarters for some time past, but when the new building is completed it will make a splendid addition to the village. All the cottages in the village have been recently painted, which improves the appearance very much.

It is reported that the Mooresville Cotton Mills at Mooresville, N. C., are planning extensive additions shortly after the beginning of 1918. The additions will be of

such a character as to practically double the present capacity of the plant.

The Lavonia (Ga.) Cotton Manufacturing Co., has about completed its additional mill, and plans to install 120 looms for the manufacture of ducks of various kinds. Cotton yarns were formerly the output of this mill, and 5,000 ring spindles were installed for that purpose. These will continue in operation, turning out yarns for the company's own use. Haynes Moorehouse & Co., are the selling agents of the concern, of which B. T. Adams is president; W. C. Mason, treasurer; C. G. Foster agent and J. H. Gibson, superintendent. There is a raw stock dye house operated in connection with the plant.

At a mass meeting held about one year ago the management of the Hampton Mills Department of the Pacific Mills at Columbia, S. C., decided to award prizes to encourage gardening and to stimulate an interest in spring, fall and winter gardens. The thirty prizes have just been awarded. Very few people living in the mill village failed to have well kept gardens. The mill management have decided, as an expression of their appreciation of the wholehearted way in which everybody entered into this great garden movement, to cut up considerable more ground, in order to give all wishing outside gardens, space to raise extra vegetables. This also helps out the food administration and helps win the war.

New England Mill Situation.

The cotton cloth mills are generally well sold ahead on a profitable basis and the labor situation is no more acute than it has been for some time past. The operatives' unions at Fall River compromised their demands for a 15 per cent advance on December 3 by accepting 12½ per cent and submitting the matter of whether the balance should be granted to a board of arbitration. The unions made a statement in which they said they would regard a strike under present conditions as an unpatriotic thing. It is known that government influences were exerted to prevent a strike. The mills in New Bedford and Rhode Island granted but a 10 per cent advance and it is being found necessary to readjust to the high scale in several instances.

It is a growing belief among many cot on manufacturers that the solution of the labor problem lies largely in a proper adjustment of food costs. New England cotton mill communities have grown so large that they are no longer fed from nearby sources but are affected in living costs much as any of the larger industrial centres far removed from the agricultural sources of supply. Comparisons of living costs in New England mill towns, in so far as they are affected by the costs of food and clothing, and fuel, show a close relation to the same forces that are making living costs high for cities like New York or Pittsburgh. Anything that will relieve the general situation will assist in curbing the justice of demands for wage advances out of keeping with precedents before the war. This wage problem is no longer local as it is found that other cotton manufacturing sections are being affected in their power to produce cheaply by the same forces affecting cities like Fall River, Lowell, Chicopee, or Manchester.

There is a readjustment of labor going on in the mills as a consequence of the abandonment of fancy goods production. It is extensive in some cases and hardly noticeable in others.

In many of the mills that make colored suitings. ginghams, fancy drills, etc., it has been possible to put the looms at work on fewer patterns without friction of any kind. Some of the large gingham and flannellete mills are now making less than half the varieties of goods they made last year and still have their looms in full operation. This same condition applies in a degree to mills making odd goods in the gray, manufacturers being able to get larger orders than usual on fewer constructions and widths. All of this is making for economy in operation and for the elimination of surplus help.

The volume of government business is steadily increasing in the mills in this section. Some of the large mills making drills have fully 60 per cent of their looms under engagement to the government and pressure is being exerted all the while to increase the orders in mills close to finishing factories, to avoid duplication of shipment. The policy of price fixing by the government is serving to limit the profits but security against loss is given by fixing a price basis on cotton values on the exchanges, and by making provisions for an increased price if wages are unavoidably forced higher during the life of long term contracts.

Most of the large orders for hospital supply cloths placed with Fall River mills having expired, the government placed another 42,500,000 yard order which had to be alloted among any corporations able to produce goods of the kinds wanted. These goods are usually 36 inches wide counting in the 40's and made from print cloth yarns. They are generally bleached and prepared for bandages and other hospital supply uses.

Other Fall River mills equipped to make light weight twills have been directed to make cloths usually made in other mills where the heavier grades are now being produced in a large way almost exclusively for the government. There is considerable readjustment of production going on in this way throughout the district, three of the largest quilt mills having 100 looms or more making shelter tent duck on governemnt order.

Some parts of the Amoskeag and other large plants that would normally be working on tickings, denims, heavy duck used in the upholstering trades, etc., have been virtually taken over for the government as large orders for uniform cloths or shirtings of cotton, or some other light weight material that can be made for war purposes, have been placed. This has taken the product of these mills out of the regular trade and civilian business must be taken care of elsewhere. Cloth for mattress covers, dunnage bags, and a variety of other uses can be made and are being made in several mills that would not engage on such work except for the government.

Under the direction of some government officials experiments have been made for two or three months on cloths suitable for aeronatic supplies, for baloons and airships, and business is now beginning to be placed for some very fine goods woven very closely from yarns as fine as 80's and 90's combed, from sea island and fancy American staple cottons. The purpose is to get cloths that have strength without weight and which can be waterproofed and otherwise treated, without impairing the value of the fabric for the uses intended. As these goods cannot be

woven fast and must be made from yarns that spin slowly, it seems probable that considerable of the fine goods mill machinery will be employed on them next year.

All mills making ginghams have an abundance of work in hand and are unable to fill considerable of the spot and nearby business offered. Prices have advanced to a level of 16½ cents for Lancaster staple ginghams, and 19½ cents for Toile du Nord dress ginghams. One of the standard shirting chambrays that sold as low as 6½ cents a yard in 1914, sold recently for 20 cents a yard. The output has been restricted on this cloth because of the inability to get the particular dyes required. Owing to the large demand for ginghams and the late contracts placed on them, mills in this section that usually bring out fall gingham lines or employ their looms on fancy flannelettes, will have to pass a large part of the business this year, and next.

Bleached cottons have ruled firm. A full output has not been possible in many concerns owing to a dearth of labor. Prices have risen another 1 cent a yard on 4-4 muslins to a basis of 18 cent for Lonsdales. Owing to the active demand and the contracted output on some branded lines, agents have held the goods "at value" for several weeks. Some of the mills specializing on bleached cottons have orders ahead that will carry into June. The business on bleached drills and jeans has been large. Wide sheetings are sold ahead for months. There has been a better volume of business recently on plain fine combed yarn cloths especially in narrow widths. Nainsooks, longcloths, and fine cambrics are very firm at the highest prices yet reached.

Print cloth sales have run in excess of the production and mills are engaged for three or four months to come. The narrow standards reached a price level of 9 cents, and the wide regulars reached a level of 12½ cents about the last of November. Prints advanced 11 cents a yard during the month to a basis of 13 cents. Owing to the blacklist imposed by the government, shipments of some of these goods could not be made abroad and were resold in the domestic trade.

Sales of some flannellettes have been made for delivery as far ahead as May of next year on a basis of 16½ cents and 17½ cents a yard. These goods were priced at 9½ cents a year ago. The demand for napped cottons has been very active. The wide goods for the manufacturing trades have all been contracted for as far as mills will sell. To meet the needs of the trade it was found necessary in most cases to apportion orders among buyers. Supplies in second hands ran short and this forced the placing of a volume of orders for delivery right up to the end of the winter. Cotton blankets are in very short supply. Those of a wool napped character have already been engaged for delivery several months into next year. Mills have been endeavoring for some time past to sell on shorter terms and the condition of the market has permitted this innovation in the past few months.

The finishing companies have been irregularly employed, those having facilities for khaki dyeing being burdened with work. The piece dyeing plants are busy. The printing plants devoted to job work are from 65 to 75 per cent employed. The white finishing works are busy but with a lessened volume of work ahead than last year. A great deal of printing in gingham styles is being done both on fine and print cloth yarn goods. Staple printers are fully employed, on wide and narrow work. Quilt mills are busy but some part of their looms are employed on duck for the government. All plain towel mills are busy but the fancy towel mills are only moderately engaged. Fancy braid and tape mills are not so well employed while many of the plain narrow fabric manufacturers have a much better order list in hand.

The National Cotton Manufacturers' Association is making a steady gain in membership and is planning for a meeting to be held in New York next May. This is a radical departure for an organization that has been very largely a New England institution in the past. It is proposed to hold its meeting at the same time the machinery exhibitors are holding forth in the Grand Central Palace.

Cotton machinery manufacturers are keeping as busy as their restricted labor supply will permit. The Draper Company has as many orders for looms as it can fill. This company, and others engaged on cotton mill machinery, has been doing a great deal of emergency work indirectly for the government. Mills that are asked to make some special cloth and cannot do so without some minor changes in machinery are instructed to go to machinery manufacturers and have their work done under conditions that will give the government work preference over everything else. This has resulted in a great deal of special work for mills all over the country and has facilitated many changes in product made necessary by the war. As prices for regular lines of machinery are high, little pressure is being exerted to hasten the progress of new enterprises, not essential to winning the war.

Lancashire Notes.

BY AN ENGLISH CORRESPONDENT.

The scheme of restricted production put into force by the Cotton Control Board was to run for a period of twelve weeks. I am writing at the close of the ninth week of its operation and at the beginning of the coming week a change in the scheme is to take place. Production is to be still further restricted. The Control Board was brought into being to prevent a cotton famine and to check a great rise in the price of the raw material owing to a shortage of supply, and now, at the end of nine weeks working of the scheme which was to serve that end, the position seems even more grave than it was when the Board was set up.

Does this mean that the Board has failed? It does not. During the operation of its scheme stocks at Liverpool have increased, and though prices of raw material have risen considerably, they have not risen to anything like the extent they would have done had unregulated buying and selling been the rule. The Board—and, what is more to the point, the trade—has had hard luck. Things were going on as satisfactorily as could be expected, and were steadily improving, when, a short while back, the amount of shipping devoted to importing the raw material was suddenly curtailed. This completely changed the situation. At the time of writing a wholesale stoppage of mills seems inevitable within a few weeks unless, in the immediate furture more tonnage is provided.

The first manifestation of the changed prospects is the further restriction of production to which I have already

referred. Under the scheme as originally planned, spinners of American might not run more than 60 per cent of their spindles unless they paid a certain levy of so much per spindle for any excess up to 70 per cent, beyond which they were not to go. Egyptian and Sea Island spinners might run up to 100 per cent of their spindles if they paid a levy on all over and above 60 per cent. The position so far as Egyptian and Sea Island is concerned is for the present left unaltered, but spinners of American may now run beyond 60 per cent only if they are on Government contracts, and even then they have to obtain a special license authorising them to do so.

This decision was arrived at by the Board after examining the results of a census of cotton stocks—the second since the Board's inauguration. In announcing it the Board wished it "to be clearly understood that there may have to be a still further reduction in the near future if the freightage available does not show material improvement", but the Board was "pressing on the Government the urgent need of giving more freight for cotton immediately". Spinners of American who wish to run more than 60 per cent of their machinery must obtain the written consent of the Government to do so and also a license from the Board. On all spindles over and above 60 per cent a levy of 1¼d. per spindle has to be paid. Nothing new has yet been ordered in regard to the running of looms, but the manufacturers are urging the Board to order a further curtailment—for reasons which are obvious.

The census was taken for the week ending October 26th, and it showed 852,992 bales in sight; but of these nearly a third were on the sea. The consumption per week was 65,428, so that at that time and rate there was roughly three months' supply. That, however, does not represent the position correctly, for the shipments in November will be much less than those of October. Failing increased shipping facilities there must be an acute crisis early in the New Year.

The operatives' attitude in regard to wages presents another complication. When the scheme of restricted production was inaugurated, they agreed to postpone for the time of its operation their claims for advance which were then before the employers. The spinners were demanding an increase of over 30 per cent, in order to bring wages everywhere 50 per cent above pre-war level, and the card and blowing room operatives wanted 25 per cent. These demands were withdrawn on account of the employers agreeing to pay levies for running above 60 per cent of their machinery, the fund so raised to be devoted to the relief of operatives who were thrown out of work by the scheme, thus saving trade union funds. The operatives, however, never reconciled themselves to the postponement of their claims and have since been very restless. The spinners have now renewed their application and are demanding that when the time for the restriction scheme expires—on December 8th.—they shall receive their increase. The manufacturing operatives are making a move on similar lines, but in their case a 40 per cent rise is being asked for. The claim of the card and blowing operatives is also to be renewed. The employers intend to resist these demands and it may be regarded as certain that if they do have to concede any advance they will refuse to pay levies to the Board as they are doing at the present time.

A scheme of apprenticeship in the cardrooms is being discussed by representatives of the employers and operatives. It has been a rule of the Card and Blowing Room Operatives Amalgamation that no male under twenty years of age shall enter the cardroom as a stripper and grinder. The shortage of labor occasioned by recruiting has, as a consequence, led to a great deal of inconvenience. Efforts are, however, now being made to arrive at a compromise. It is proposed that apprentices shall be introduced in proportion to the number of adults employed, and that the difference between the wage which would be paid to an apprentice and to an adult shall be divided between the adult workers. All the details of this proposal have not yet been agreed upon, but negotiations are proceeding amicably and it seems likely that an agreement on these lines will soon be arrived at.

The British Cotton Growing Association has approached the Board of Trade calling attention to the fact that, owing to the difficulty of covering purchases of cotton in futures, and the serious shipping outlook, it may be impossible to buy next season's cotton crop in Africa, and proposing that the Government shall either help the association to buy the cotton or take it over themselves in Africa, as it would be a most serious matter if the natives were unable to find a market for their cotton. No definite reply has yet been received, but it is hoped that the Government will take the matter in hand.

The association has recently received some important information with regard to the possibilities of increasing the production of cotton in Egypt and the Sudan. In Egypt the draining and irrigation scheme should in course of time add another 800,000 bales of 500-lbs. each to the Egyptian cotton crop, and in the Sudan the dam and canalization schemes should produce, within a period of (say) 25 years, something like 440,000 bales of 500-lbs. each. It is stated that there is every reason to anticipate an increase of about one and a quarter million bales in Egypt and the Sudan, with possibilities of a further increase in the future if large storage works are constructed on the upper waters of the Blue Nile. With regard to the scheme for irrigating the Gezira plain, the President of the Board of Trade is hopeful of arranging with the Treasury for an advance to enable the preliminary work to be proceeded with.

Cotton Comment.

BY H. AND B. BEER.

New Orleans, December 12th, 1917.

Confirming early private predictions of a loss to the crop of about 1,000,000 bales as a result of the early October killing frosts and freezing temperatures in the northern half of the cotton region, Washington reports as follows:

"A killing frost before the middle of October, several weeks earlier than usual, was the cause of the million bale decrease from the October estimate when the department forecast a crop of 12,047,000 bales.

"This frost caught far more than the average immature bolls," a summary of the report announced, "doing damage amounting to approximately a million bales, and lowering the grade on much more of the crop."

Owing to the damage done to the crop by the low tem-

peratures in October the market gradually advanced further, experiencing a big advance when the government estimate was announced on December 11th.

According to returns to the Bureau of the U. S. Department of Agriculture the indicated yield in bales of 500 pounds gross weight is only 10,949,000 bales vs. 11,450,000 last year. Compared with last year, the estimate by states follows: Alabama, 505,000 vs. 533,000; Arkansas, 895,000 vs. 1,134,000; California, 67,000 vs. 44,000; Florida, 40,000 vs. 41,000; Georgia, 1,820,000 vs. 1,821,000; Louisiana, 615,000 vs. 443,000; Mississippi, 895,000 vs. 812,000; Missouri, 51,000 vs. 63,000; North Carolina, 570,000; vs. 654,000; Oklahoma, 890,000 vs. 824,000; South Carolina, 1,235,000 vs. 932,000; Tennessee, 206,000 vs. 382,000; Texas, 3,115,000 vs. 3,726,000; Virginia, 16,000 vs. 27,000; all other states, 29,000 vs. 14,000.

Running bales usually average 515 pounds gross weight, and as the government estimate is based upon bales of 500 pounds gross weight, a reduction of 3 per cent for weight of running bales brings the indicated crop down to only about 10,621,000 bales, and an allowance of 12 per cent for linters makes 1,274,000 bales of linters, or a total yield, including linters, of only about 12,223,000 bales vs. 12,685,000 last year.

Under the circumstances prospects are for the smallest crop of lint cotton since 1909, and even if the world's consumption of American cotton is reduced to 13,000,000 bales this season vs. 14,000,000 last season, there will hardly be enough cotton to go around this season.

Exports thus far this season are about 800,000 smaller than to even date one year ago—1,898,000 against 2,707,000, but last Friday they were less than 100,000 smaller than to corresponding date year before last when exports for the whole of that season were 500,000 larger than the past season. Therefore, it is likely that exports will be larger than last year after the new year, as the visible supply of American in Europe last week was only half of what it was one year ago—800,000 vs. 1,600,000.

With one-half more cotton on hand last year than now, Europe practically experienced a famine in cotton last summer, and unless foreign spinners import more freely of the staple in the future, their mills will have to close for want of raw material before the season draws to a close. At the very least Europe needs 5,000,000 bales of American cotton vs. their imports of 5,500,000 last season, and American mills will likely require about 7,500,000, or a total of 12,500,000 bales, but there is the possibility of foreign spinners taking more than 5,000,000, as their mills actually consumed 6,690,000 last season, made possible by encroaching on their reserve stocks, which, at the close of last season, were virtually exhausted.

The textile trade with the allied nations at war, and in neutral countries, is booming owing to large demand by the governments for cotton goods and by the civilian trade for commercial purposes. The extraordinary high prices being paid for the mill product apparently being a secondary consideration when deliveries are guaranteed.

We have followed the market closely throughout the growing period of the crop, and now that official data is at hand as to the probable size of the year's production, still higher prices appear to be inevitable eventually. Consequently we advise buying yet, late deliveries preferred, owing to the big discount at which they are quoted.

The Yarn Market.

The yarn market for December was comparatively dull. The high prices charged by spinners did not meet with the approval of the majority of buyers and unless it was absolutely necessary to go into market for yarns, they refrained from buying.

Transportation difficulties continued and much yarn was in transit somewhere that was doing no one any good. The approach of the holiday season, inventory time and the exceedingly high prices all tended to reduce the quantity of business transacted although many agreed that under general buying the prices would go still higher. Government buying continued and this and the delay in transportation made for still higher prices than would otherwise have been probable.

Early in the month some dealers were reported as being willing to sell mercerized yarns for deliveries throughout 1918. It is probable that light buying will prevail until after the holidays when, according to some buyers, there is considerable of a feeling that prices may ease off. However, inasmuch as the merchants and planters are holding up the raw material market to what seems an inflated price, it is very doubtful whether the spinners can afford to lower their prices, particularly in view of the increased labor cost and other material cost in the manufacturing industry.

Following are some of the price quotations from the Philadelphia market:

Southern Single Skeins.

4s to 8s	46 @46½	10s	47 @47½
12s	47½ @48	14s	47½ @49
16s	49 @49½	20s	49½ @50
24s	51½ @52	26s	51½ @53
30s	53½ @54		

Southern Single Warps.

8s	47 @47½	20s	48 48½
12s	48½ @49	14s	49½ @50½
16s	50 @50½	20s	52 @52½
26s	53 @53½	28s	53 @53½
30s	64 @65	40s	67 @68

Carpet and Upholstery Yarns in Skeins.

8-4 slack	48 @48½	9-4 slack	48½ @49
8-3-4 hard twist	43 @43½		

Southern Two-Ply Skeins.

8s	47 @47½	10s	48 @48½
12s	49 @49½	14s	48 @48½
16s	48 @48½	20s	49½ @50
24s	52½ @53	30s	53½ @54
36s	57 @58	40s	67 @68
50s	90 @93	60s	97 @$1.05

Southern Two-Ply Warps.

8s	48 @48½	10s	48 @48½
12s	48½ @49	16s	50½ @51
20s	52 @52½	24s	53 @54
26s	54 @54½	30s	55½ @56
40s	68 @69	50s	90 @95

Northern Two-Ply Carded Peeler Skeins.

20s	53 @54	24s	56 @57
26s	57 @58	36s	70 @71
50s	96 @97		

Two-Ply Combed Peeler Skeins.

20s	68 @69	24s	71 @72
30s	76 @77	40s	87 @88
50s	98 @$1.00	60s	$1.05@1.10
70s	$1.20@$1.25	80s	$1.35@1.40

Southern Frame Spun Carded Yarn on Cones.

8s	49 @49½	10s	49½ @50
12s	49½ @50½	14s	50 @51
16s	51½ @52	18s	52 @52½
20s	53½ @54	22s	54 @54½
24s	55½ @56	26s	57 @58
30s	59 @60	40s	69 @70
30s tying in	56 @57		

Northern Mulee Spun Carded Yarn on Cones.

10s	51½ @52	12s	52 @52½
14s	52½ @53	16s	53 @53½
18s	53½ @54	20s	54 @54½
24s	57 @58	26s	59 @60
30s	62 @63	40s	72 @73

Northern Mule Spun Combed Peeler Yarn on Cones.

10s	62 @63	12s	63 @64
14s	64 @65	16s	65 @66
18s	66 @67	20s	68 @69
22s	69 @70	26s	71 @72
30s	76 @77	36s	82 @83
40s	87 @88		

COTTON MANUFACTURING.

Manufacturing Combed Yarns. *

BY JOHN W. LONG.†

Twenty years ago there were but very few cotton mills in the South that manufactured combed yarns, and previous to 12 years ago they were very scarce. Today we have in North Carolina 54 mills with approximately 670,000 spindles, the product of which are combed yarns. Gaston county, North Carolina, has 28 of these mills, with 56 per cent of the spindles; and the city of Gastonia alone has 15 of these mills containing 25 per cent of the total combed yarn spindles of North Carolina.

The first important subject to deal with in the manufacturing of combed yarns, is the selecting of proper staple and grades of cotton necessary to make the quality of yarn desired. Combed yarns are supposed to be even, smooth and clean, with a regular and uniform twist, and an even yarn with uniform twist cannot be obtained if we are spinning 60's yarn out of cotton that should be spun into 40's. We should not spin yarn finer than 30's, from 1-1/16″ cotton, and from 30's to 50's, 1-1/8 to 1-3/16″ cotton, from 50's to 70's, 1-1/4 to 1-5/16″ cotton, from 70's to 100's, 1-3/8 to 1-1/2″ cotton. However, there is some exceptions where an extraordinary product is to be manufactured, for instance automobile tire yarn, where strength and durability are desired; this yarn is spun into coarse numbers from long staple sea-island cotton.

As a rule the man that has to produce the goods does not have much authority in the purchasing of cotton, while he should have the right to reject any lot or portion of lots of cotton that is inferior for the class of goods that he is making, and if he does not know the grades and staple of cotton that are necessary for the product that he is manufacturing he surely is not the man for the position.

The next in order is the blending and mixing of this cotton. A good mixing is necessary from the fact that it is grown in different sections where the soil and atmospheric conditions are not the same, consequently there is a slight difference in the color and staple of cotton that is of the same grade, and in some bales the staple will be more irregular than that of others, also some will contain more foreign substances than do others, hence the necessity for thorough mixing.

In mixing, I prefer the bale breaker. This breaker should be located in a room large enough for at least fifteen bales of cotton. When the cotton is brought into the opening room it should be distributed systematically around the bale breaker so as to enable the tender to have access to each bale. After the top bagging and ties have been removed, the tender should proceed to take a small armfull from each bale, commencing at bale number one and continue this route so that all the bales will be consumed about the same time.

Pickers. I consider the horizontal, and inclined cleaning trunks detrimental to the manufacturing of combed yarns, for it is almost impossible to obtain a regular and even distribution of the cotton from these trunks. I consider the best equipment for a picker room, an automatic hopper connected to a breaker picker, fitted with a three blade single beater, and single beater intermediate and finishers pickers. I prefer the carding beater for both intermediate and finishers. The carding beater acts on the cotton similar to that of a licker-in on the card, it does not break the staple, it produces a better and more even lap than does the blade beater, and will extract as much motes and foreign substance. Also with this beater the yarn will have a better feel and a more glossy appearance.

The blows per inch delivered to the cotton by the beater is an important factor in making combed yarns, and more especially so when running long staple cotton. About sixty-five blows per inch should be given to 1-1/8″ cotton, and less proportionally for longer staple.

Cards. There is one great error that many mill officials of the South have made heretofore, and are still making today; that is, they fail to equip their mills with a sufficient number of cards to produce a good quality of yarn. The production of a card should not exceed fifty pounds per ten hours, in this case the life of the card, especially the clothing, would be prolonged, the cost of the upkeep lower, and more important still, superior carding qualities obtained. Another feature in favor of light carding is that a finer number of wire may be used in the card fillet, which means more carding per square foot, and an increasing number of carding points. I don't agree with some who say that the card is the soul or foundation of the mill, for the whole process of manufacturing combed yarns is important, and needs the careful attention of a mechanical brain, and an observing eye, if high efficiency of the machinery, quality of merchandise, and production of mill is to be obtained.

The card can be compared to the human body; for the human body to attain its highest ability it must not take into its system any more than the system can digest, and this must be properly prepared. The card must have its working organs carefully attended to and the material upon which it feeds properly prepared, if it is to produce high class sliver.

The idea used to be predominant that a card should not be drafted more than 100, and generally a draft from 80 to 95 was preferred; a short draft is all right when running short staple cotton, but, when carding cotton 1-1/4″ staple and above, a draft of 120 is far better than a draft of 100, for a longer draft gives the licker-in more opportunity to disintangle the fibers as they are delivered to it by the feed rolls, and consequently a better cleaning at this point is obtained, which is very much desired when running long staple cotton, as it contains more leaf and foreign substance than does the short staple.

Sliver lappers. Before cotton can be combed, it must undergo a preparatory process, and for this particular purpose we have the sliver and ribbon lapper machines. The object of the sliver lapper is to convert the card sliver into a suitable form for the ribbon lap machine. Sixteen to 20 cans of card slivers are placed at the back of this

*Extracts from a paper presented before the Southern Textile Association.

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machine, (the number of slivers depending on the width of lap desired.) These slivers pass over spoon guides and into three pairs of drawing rolls by which they are consolidated and attenuated into a sheet form, and after passing through a pair of calender rolls, the sheet of fibres are rolled onto wooden spools in the form of a lap.

Ribbon lappers. The object of the ribbon lapper is to more thoroughly prepare the cotton for the combers. However, all combed yarn mills do not use the ribbon lap machine. I consider the ribbon lapper absolutely essential in the manufacturing of combed yarns, and to be thoroughly convinced of this fact it is only necessary to unroll a few yards of lap from the sliver lapper, and the same amount from the lap of a ribbon lapper, then hold these two between the eyes and the sun, and the facts are evident. Another point in favor of the ribbon lap machine is that when it is not used, the comber will comb out more of the long stock than when it is used, this being due to the fact that the fibers as they come from the sliver lap machine have not received the necessary attenuation and are not of a uniform structure.

When the ribbon lap machine is used, the laps from the sliver lapper are placed on two slowly revolving wooden rolls on the back of the ribbon lap machine, where they are unwound and pass through four pairs of draw rolls similar to those used on drawframes. From the front of the drawing rolls the fibers in sheet form pass over curved plates to a table. At the base of each plate is a pair of small calender rolls, through which the sheets of fibers pass, and are carried to the end of the table. They then pass between two pair of calender rolls, and are wound on to headless spools in the form of lap similar to that of a sliver lap machine. Ribbon lappers are constructed to double 4 and 6 laps from the sliver lapper and usually have a draft of from five to six.

Combing. The object of the comber is to remove the short staples of cotton, and to straighten out the fibers and lay them parallel, so as to obtain an even smooth yarn; in addition it also removes tufts, nips, leaf, and other foreign matters that have passed through the other preparatory processes. The combers in general are constructed with six and eight heads, each head being complete within itself, and each head is timed and set so as to have their working factors to act correspondingly at the same time, and each head receives its power from the same source. The laps from the ribbon lapper usually weigh from 350 to 600 grains per yard, the weight depending on the make of comber and production desired. This lap is laid on two corrugated lap rolls on the back of the comber and is fed to the heads intermittently; the lap being drawn over the lap plate and delivered to the nippers by the feed rolls. The nippers are open at this action of the feed rolls, and immediately close, gripping the cotton and holding it while the needle segment passes through the cotton and relieves it of the short stock and foreign substances. The fibers under the action of the combing are not connected with the fibers previously combed, but when the combing by the needle segment has been performed the fluted segment, which is fastened to the opposite side of the cylinder to that of the needle segment, bears the projecting ends of the combed fibers to the detaching rolls, where they are pieced up to the fibers that have been previously combed. At this junction the top comb drops in and combs the rear ends of the fibers that were being held by the nippers.

The combed fibers are then deposited into the sliver pans. These pans have a trumpet attached by which the fibers are condensed into a sliver and conveyed to the sliver table by a set of calender rolls. These six or eight slivers as the case may be, pass through the drawbox attached to the foot end of the sliver table, which drawbox contains four pairs of drawing rolls similar to that of a draw frame. Here the sliver receives a draft of about six, and from the drawbox the sliver passes through a trumpet into the coiler head and is deposited into the can.

The comber is a very delicate machine, and to produce a good quality of yarn, the slogan should be "Watch the comber." A comber should be taken down and given a general cleaning and resetting four times per year, and the operatives should be careful in their cleaning. The cleaners and detaching rolls should be kept clean, and the needle segments kept free from hard wads and lumps. Operatives should never be allowed to clean any part of a comber while it is in motion. After the cleaning, the sliver should be broken at the coiler, and run on the floor until the sliver from the extreme head has passed through the drawbox. The comber is a machine where innumerable lumps and slubs will be made and distributed throughout the succeeding processes if they are not carefully attended to. The overseer should examine every delivery in the comber room as often as four times each day, and not less than two times.

Draw frames. The draw frame is one of those supposed simple machines that need very little attention, and if time would permit I would like to emphasize that the draw frame is one of much importance in the manufacturing of combed yarns. If the rolls are not correctly spaced for the staple of cotton that is being used, the draw frames will produce a sliver, that, when spun into yarn, will be irregular, or to be more explicit, thick and thin places will show up in the yarns, and the elasticity and strength will be eliminated to a large extent, this being more especially true when using metallic rolls.

Roving-frames. It is customary when spinning medium numbers up to 40's, to use only three processes of roving frames, viz. slubbers, intermediates, and fine frames. For finer numbers the jack frame is included.

The draft arrangements for the three processes should be 3½ to 3¾ for slubbers, 4¾ to 5 for intermediates, and 6 to 6½ for fine frames. The draft for four processes should be, 4-5-6 and 7 to 7¼ respectively, or as near this as it is possible to obtain. I am a great believer in systematic drafts; in fact how can anything be done correctly without applying business principles, i e, system? I was conversing with a superintendent some time ago, and he was telling me about how badly his spinning was running, and when I found that he was running a draft of 3½ on slubbers, 8½ on intermediates and 7 on fine frames, I was not at all surprised that his spinning was running badly.

Twist. There is no definite or fixed rule that will govern the amount of twist to be inserted in roving when making combed yarns. The standard rule of 1-2/10 times the square root of the hank-roving being made is about right for 1-3/16" staple, for shorter staple, it is necessary to apply more twist, and less twist for longer staple.

Tensions. The tension gears can do a great deal of damage to the roving and they should receive special attention, as a tight tension will stretch the roving between

the bite of the front roller and the presser foot of the flyer, and the result will be unevenness, weakness, and variation in weight.

Cleaning and operating. It is a practice in some mills to allow the operatives to brush off the carriages, and back of frames with a whisk or an old broom. This should never be done in a combed yarn mill, for when doing this, the lint will rise up in the air and alight on the roving in the creels, and go through with the roving, also it will catch on the roving between the flyers and front rolls, and be twisted into the roving. This will cause the ends to break down on the spinning, and where the ends do not break, it will spin into the yarn, and cause gouts and slubs to show up in the finishing yarn.

The roller beams should not be wiped off during the making of a doff, for when the operatives are passing their hands in and out through the ends with a bunch of waste, the lint and foreign substance that collects on the waste will catch on the roving and be twisted in, and the result will be the same as when using a broom. These beams should be wiped every doff, while the front line of flyers are lying on the clearer boards.

Spinning. After having made a good roving for the spinning frames, it still stands a good chance of being spun into an inferior yarn; and yet it is very much easier to spin a first class yarn than it is to make an inferior product. Just imagine for a moment a spinning room where the machinery is kept in good repair, clean, properly oiled, and the gearing correctly set; where you do not hear the tin cylinder sounding like a German aeroplane, nor the jack and cylinder gears making a noise like two bulldogs scrapping over a bone; where the frames and floors are kept clean at all times, where the spinners have been trained to do "classy" work, and every rule is carried out promptly to the letter. Such a room will make good yarn.

For the best work frames should be equipped with proper gauge, the proper size rings, and the right length of traverse for the number of yarns to be spun. Quite a few mills are planned and equipped to manufacture number 60's or 70's yarns, and in a year or so the price of 40's looks a little better to the officials, and the mill is changed to this number and sometimes coarser.

Generally the highest managing official of the mill does not know the manufacturing end, and he does not realize the fact that it is a difficult matter to spin 40's from short staple cotton on a 2″ ring and a 7″ traverse, and that it will greatly increase the cost to spin 20's on a 1½″ ring, with a 5½″ or 6″ traverse. When spinning fine numbers on frames with a long traverse, the front roller can not be run to the maximum speed nor a traveler fitted that will give regular tension on the yarn as the ringrail traverses its course; more especially is this true when spinning soft or hosiery yarns.

In the manufacturing of combed yarns the help should be taught to do their work as nearly perfect as possible. It should be the duty of the spinners to piece up the ends that break down, to keep the roving replaced in the creels, and to keep the roving boards, the thread boards, clearer boards, rings, and roller beams cleaned, and with the exception of this they should do no cleaning. There is only one way to correctly piece up ends, and that is to twist it up with the left hand, and twist to the left. Spinners should be taught this, and strictly prohibited from piecing up ends any other way.

Spinners should not be allowed to pick rollers, clean cap gears and spindle bases, for if they are, black and oily yarns will surely result. Regular cleaners should be employed to clean spindle bases and rails, cap gears, and leather and steel rollers. I will also add that all cleaning should be done by wiping with waste, for if there is anything that will "get my goat" it is to see a cleaner going up and down the spinning aisles making the lint fly with an old broom.

The spindles should be plumbed at least every twelve months, the steel rolls should be taken out and given a good polish every six months with ground pumice stone made into paste with spindle oil, and while doing this the rings and ring-rails should be cleaned by boiling three or four minutes in ammonia water, rinsed in clean boiling water and covered in sawdust to dry. The ring-rails should be kept level, and travelers changed about every three weeks, so as to prolong the life of the ring and to insure no damage to the yarn by the worn travelers.

Spooling. Great care should be exercised in selecting the proper size and weight spool to be used on the different numbers of yarn, so that the strength of the yarn will be sufficient to revolve the spool on the twister creel spindle, without undue stretching. Also on the finer numbers of yarn and on medium numbers where a shorter staple than the standard for the number is used, a longer barrel spool should be obtained; this overcoming the strain to which the yarn is subjected as the spool empties. The spindle speed of the spooler should not exceed 800 r.p.m. where shuttles are used, but can run at 1000 r.p.m. where spooling is done from filling wind which is rapidly becoming the universally favorite wind.

The build of the spool should be carefully adjusted so as to form a decided convex surface of yarn when the spool is full. This eliminates excessive waste due to tangling over ends and break-backs in the creel.

Twisting. On coming to the twisting of combed yarns, I again find it difficult, as in the case of each individual process, to decide which points to mention, on this subject, which in itself opens a field of unlimited possibilities for discourse. However, I will deal briefly with a few essentials, or rather mention the points which require special attention. The twister commonly used for this class of work is the wet type. When the number or variation of numbers to be run are decided on, careful attention should be paid to the proper selection of twisters.

Under this head will come size of ring, diameter of ring, length of traverse, diameter of front roller, size of spindle, diameter of whirl, space between spindles, etc. The mistake is too often made of trying to run a 60's yarn on a twister equipped for a 20's, and vice versa. When twisters are set up the water trough should be perfectly level, and then clean water should flow through the trough continually. This can easily be done by piping in at the head of the frame and adjusting an overflow drain at the foot of the frame to assure uniform depth. This method adds materially to the building of a smooth, glossy, cylindrical yarn.

The subject of twist next comes to my mind as a prime factor in the manufacture of an A-1 yarn, and one of the few that I wish to mention. On account of the various kinds and styles of fabric into which the ply combed yarns are manufactured, various twists are required in the same number of yarn, and as the twist determines to a great

extent the appearance, elasticity, weight and strength of the fabric, therefore a uniform number of turns of the required twist is necessary. The tape driven spindle does away with this uneven twist, but the band driven spindle also gives satisfactory results with a little attention. Bands weighing from 90 to 95 to the pound are heavy enough for the usual twisting equipment, and where the fine numbers are run on light bobbins and short traverse even 100 bands per pound are not too light. All operatives on or about the twisters should be instructed to watch for, and remove bands that show in the least to be slack, and each time the twister runs full the experienced eye can easily detect he slack twist bobbins by their size.

At appointed periods, the trough, rollers and rings should be washed thoroughly and in the majority of cases the ring-rail should be washed in boiling water. After a fair life of travelers have been determined under the existing conditions, periods should be set, and travelers changed regularly, to avoid chafing yarn and binding on rings. Cleaning should be done only when twisters are standing, and then only directly after doffing.

Warping. The warping of combed yarns includes three styles, viz. chain, ball and beam warps. However, the beams are used almost entirely with the single yarn, while ply yarns are warped into both balls and chains. At this point I will again mention the necessity of the proper spool. For instance a 6″x5″ spool will do for single yarns up to numbers 30's, and ply yarns to numbers 50's. A 5″x4″ spool is satisfactory on single yarns from numbers 30's to 80's; and on ply yarns from 50's to 120's. This will vary some due to the staple of cotton used, but in the majority of cases it is satisfactory.

All warper creels should have glass or porcelain steps, and a wooden skewer is preferable. Iron skewers, especially on warpers equipped with cast iron steps, may often become imbedded in the wood of creel causing tight ends in the warp. Stop motions, either electric or mechanical, should be watched carefully and adjusted so they will act immediately when an end breaks, and the speed should be regulated so that machine will stop before a broken end runs through and cannot readily be found to be pieced up.

Cone winding. Where yarn is to be used for knitting into hosiery and underwear, it is necessary to wind the yarn on cones so as to enable the yarn to unwind at the knitting machine without excessive breakage. Usually two to two and one-half pounds of yarn are wound on a single cone, this being necessary to keep the knitting machine running so as to obtain a maximum production.

In order to produce a good and clean cone, the winders should receive very careful attention, they should be kept clean from lint, waste, oil and greases, and they should not be cleaned while in motion. The thread guide and bars must be kept properly adjusted so the yarn will not cobweb or overtangle at the ends of the cones. The slub catchers could be set close enough to break the ends when there is a slub or heavy place in the yarns, and they must not be set so close that they will chafe the yarn.

John Hetherington & Sons, Ltd., announce that they are moving to new offices, Rooms 1125-6 Rice Building, close to South Station, and that their address will be No. 10 High Street, Boston, Mass. A. S. Fuller is American agent.

Overseers and Machinery.

BY GEORGE S. BROWN.

Practically all overseers appreciate new machinery of the latest types, and endeavor to have their departments obtain as large a number of replacements in this line as is possible.

This ambition of getting rid of the old, antiquated and badly worn machinery and replacing it with new, should be encouraged only to a certain extent. The overseer who is continually clamoring for more and more new machinery is very liable to substantiate his claims by having plenty of old machinery fit to be junked.

It is so easy to let a machine go to rack and ruin that some overseers drift into the habit of neglecting certain machines when they feel that new ones will be readily forthcoming. In some cases, this action might be excusable, but these cases are rare. The habit in general should be severely censured, for it is but a step from neglecting old and worn machinery to the neglect of the new, not to mention the bad work—continually growing worse—that the old machines are allowed to turn off.

"The strength of a warp lies in its weakest thread," as has often been said. The old neglected machine, as a rule, is the one that puts that weakest thread into the warp, so it is obvious that as long as a machine is operated in a mill, just so long should that machine be kept producing good work. If good work, or work not good enough to be acceptable can no longer be produced on a machine, then that machine should be junked or at any rate stopped.

Many overseers complain that they cannot turn off good work on account of the equipment of their departments. If they only had such and such a make of machinery, or such and such a size, gauge or width, things would be different. But as they haven't them and the outlook is not very bright for the fulfillment of their desires, they just let things slide. And they usually slide themselves out of a job before long.

If every mill was supplied with brand new up to the minute machinery all the while, stockholders would get nothing more substantial for dividends than excuses, and without satisfied stockholders, no business can succeed—or even continue at length. Machinery has always been expensive, and at the present time its cost is almost prohibitive, so it behooves every mill owner, superintendent and overseer to conserve his equipmnt. Proper care of machinery means great saving throughout the entire mill. Strange as it seems, repair bills on neglected machinery are greater than on that which is well cared for. Here is the reason: A man who neglects his machinery always has more breakdowns than the man who is careful of the machinery under his supervision. The neglectful man never does a repair job decently and the same trouble is repeated very soon, or something else breaks which can be traced directly to the poorly performed repair. Help employed to operate neglected machinery soon get careless and this leads to many extra repair jobs.

In most mills where help are employed on piece work, if a machine breaks down, or is stopped whereby the tender's wages are reduced, the mill makes up the loss to keep the hand satisfied and in their employ. The more breaks, the greater this expense. Where one process of manufacture is hindered by stoppage of one or more machines, the

entire department is very liable to be more or less upset and have the output reduced. Day hands cost the same whether output is full or curtailed. Machinery that is breaking frequently produces bad work that seriously interferes with the subsequent processes, as well as reducing the value of the manufactured goods. This is shown by the increase in number of second quality goods.

The overseer who is worth searching for and worth keeping is one who understands that he must make a good showing with whatever equipment he has. One who feels that he must not let his equipment deteriorate. He will advise putting in new machinery if it is needed, but he will not deliberately allow machines to go to ruin in order to have them replaced. He knows that if a machine has been cared for, the mere fact that it is old does not mean that it should be junked.

In one of the smallest states in the Union, a big corporation is operating a large number of mills, both large and small. These mills are operated at a profit, too. Nevertheless, some of the machinery they are running is so old that none but an old timer could remember when it was installed. But, just the same, this old machinery has been carefully and painstakingly looked after since its installment years ago, and today, looks better and runs better than machinery installed less than five years ago in many other mills in the same state.

Efficiency is the present day watchword. Many confound efficiency with "being up to date." Discarding the old, because it is old, and procuring the new, just because it is new, is not efficiency. A simple and easily understood definition of efficiency is: Getting the most out of a thing in the shortest time at the least expense, and then keeping this up for the longest possible period.

If one mill is turning off $500,000 worth of goods per year with new machinery, while its exact counterpart equipped with old machinery turns off but $475,000 worth, it would look as if the newly equipped mill was the more efficient. If to keep the new mill right up to date in its equipment costs $50,000 while during the same time the other mill spends but $5,000, then the efficiency seems to be with the older equipped plant.

There is a time when it is very proper to throw out old machinery or even new machinery, and that is when a new design has been brought out and proved a success, whereby a greater production, better quality, less manual labor, or a lower grade of stock can be used and still keep the finished product up to its required standard. When improvements such as cited are offered, then the sooner the change is made the better; but merely throwing out machinery because it is old, or installing machinery because it is new but that offers no particular advantage except its newness, is a wrong standard to adopt.

The overseer who can always supply a wreck when the suggestion of putting in a new machine is offered, should be invited outside of the works and kept there. On the other hand, the man who keeps old machinery running well and looking well, surely will not disappoint the management of a plant if new machinery is entrusted to his care. And it is surprising how long *new* machinery will *remain new* under his supervision.

The greatest cause of damaged machinery is untidyness in a department. Dirt, waste, empty bobbins, etc., are allowed to accumulate and lie around on the floor and under the machines. Very frequently some of this material gets caught in the gears or winds around spindles or shafting and causes either a smash, a fire, or both.

When a break down occurs on a machine, it is rare indeed when other parts are not strained and thrown out of correct adjustment. After the repair is made and the machine again started, as a rule it does not run so easily or so smoothly as it did previously. Perhaps during the next two or three days there will be petty troubles arising from the first break, which will further tend to cut down production and irritate the tender who gets more careless than usual.

Some fixers have an undesirable habit of finding fault with the tender of a machine regardless of what caused the smash. This pernicious practice stirs up the machine tender and creates that "I don't givadam" spirit which will quickly add to the breakages and accumulation of bad work. Overseers and assistants with the habit of yelling at help, show their lack of ability to manage. Nothing arouses resentment or creates lack of respect among employees any speedier than shouting at them. And when an overseer gets the help down on him, the best remedy is a new overseer, or there will be a lot of damaged machines, bad work, and a shortage of the quality of help worth retaining.

A type of overseer to avoid is the one who strolls through a department and immediately declares that everything is *all* wrong, that the man whose place he seeks doesn't know his business at all He knowingly informs the management that it was lucky for them they were about to make the change.

As soon as he takes hold of the job, he begins immediately to tear things apart. He does this in good shape and upsets what little system there was, and the upshot of the whole affair is, that things *stay torn apart*. Beware of the man who thinks he knows all about a department the first day he steps inside of it.

Then there is the narrow minded man, who is always afraid some of those under him will find out how to do things for themselves. This man belongs to the ignorant class or he wouldn't be so secretive about things. There isn't a process, method, system, or machine about which a wide awake man can't get all the information needed from machine builders, technical magazines and books, or technical schools.

The secretive man usually knows but little any way, and adds very slowly to his store of knowledge. He puts on a wise look but says nothing. He never discusses his work or asks questions, *and he rarely reads*. He spends years and years in the mill, but the store of useful knowledge he acquires would make a very thin volume.

The man who doesn't know it all, and knows that he doesn't, and who isn't afraid to admit it, is the man who will pick up more useful knowledge in six months than some men would in that many years. He may run up against problems that will perplex him and stop progress for the time being, but he doesn't sidestep; if he can't solve the difficulty himself, he asks others for advice and gets it. This kind of a man is always ready to help the other fellow, and he's willing to be shown himself. He is not a bluffer; he is just what he appears to be, and he always makes a success of his position.

Knowledge is power only to the individual who knows he doesn't know it all.

Dyeing, Bleaching and Finishing.

The Dye Industry and Cotton Dyeing.*

BY CHARLES R. DELANEY, M. I. CH. E.†

So much discussion has taken place in the last year or so in connection with the dye industry and so much general misinformation of a startling nature has reached the eye and ear of a more or less interested public that it seems as though it were about time for some one that actually has had the necessary experience to know what he is talking about to say something about our industry. In times past—in recent times, that is—everybody has heard some extraordinarily illuminating statements from a few sources which we can roughly define as first, middlemen, secondly departmental employees; and thirdly and by far the most retiring and least vociferous, the bona fide manufacturer, and in this last group which represents actually the man that knows what he is talking about you have heard very, very few, and in the—before the War at least—most important American branch of the dyestuff industry, namely that of the natural dyestuff manufacturers, you heard nothing. Why is this? I assume that for the same reason that you were not interested in the statements of the manufacturers of the steel that went in to your boilers, nor the metals of which your looms were composed—yet cut off the makers of steel from your plants and how quickly your interest would rise. So it has been with your dyestuffs. How little interest has been shown in the one class of manufacturers who actually kept your dyeing industry running when you found that the foreign dyemakers were prevented from supplying you. And when in a panic over the rumors from the German controlled aniline industry to whom did you go? To the natural dyewood extract makers if you were fortunate and if you were not, then to the distributors who had contracted with the extract makers for whatever part of the output they had had sufficient foresight to secure.

Did you ever stop to think for a moment why it was that the natural dyestuff makers were able to supply the demand when so suddenly called on? Why, their plants were operating and had been operating for years supplying other branches of the industry that required good cheap color and it was a simple matter for them—provided they had the necessary stocks of raw materials on hand—to greatly increase the output of blues, yellows and blacks and their various compound shades, and this was done, and to the credit of a few of the big manufacturers and the everlasting shame of some others who were carried away by their feverish desire to emulate the German artificial color houses in the grasping after excessive profits—the usual trade was protected and deliveries were made by the genuine manufacturers exactly on schedule and at reasonable prices.

The whole thing simmers down in the mind of the manufacturer of dyes to this. Do the American people with their tremendous inventive ingenuity seek to protect the imitators of the Germans because of a fancied need, or do they, when their attention is brought to it, desire to give this protection to American manufacturers of absolutely American materials which have always been made here and made better than anywhere in the world?

There is a tree that grows in the South known as the Black Oak and from this tree we have made a concentrated yellow dyestuff from 1869 to this very day—and because of the superiority of this yellow dyestuff our largest customers before this great War were the Germans and the Swiss Color makers. When George Washington was a boy, we—the United States—long before Perkins invented artificial madder, had a dyestuff industry which has been in operation continuously to this present time, always making natural dyestuffs and it was this natural dyestuff industry in which millions of dollars were invested that kept your dye houses running when the Germans tried to force you to supply raw cotton to them to make explosives that would now be used to tear your sons and brothers into pulp, in exchange for their artificial dyes so largely a product also of their high explosive works.

I think I need refer only lightly to the recent change in name of some of the Imperial Government controlled dye industry branches here in the United States who are endeavoring to hide behind the sheep's fleece the blood-thirsty and blood-be-smeared wolf of the Trinitrotoluol industry. But I do not wish to take up your time with details such as these but rather to show you that you should place your trust more in the manufacturers who have been continually bringing their products to the highest possible standard of quality and producing materials here superior in every way to those manufactured abroad of the same kind. There have been natural dyestuff plants in Great Britain, France, Germany, Switzerland and Italy long before the War, yet our foreign business steadily expanded for the sole reason that the United States made better natural dyestuffs than these other countries, and if they did send over anilines and fiercely endeavor to wrest every trace of the dyestuff industry away from us in their unholy desire to keep up the manufacture of munitions of war at any cost, yet nevertheless in spite of this and the lack of any adequate tariff protection we held our own and annually increased our output.

Have we American makers of natural dyestuffs been content with our product, or content to feebly imitate our foreign competitors or whine because the foreign patents on certain materials kept us from imitating other men's brains through our lack of them? Not much! Not any! Why the very shortage of foreign colors has been the greatest stimulus to the United States manufacturers possible and I am exceedingly glad to announce that without consulting any of the famous press bureau experts in order to ask for a certificate of merit, we have developed a method of manufacture of dyewood extracts for dyeing cotton and union goods, and this includes cotton and wool, cotton and silk and ordinary shoddy that will be revolutionary in its relation to the dyeing industry. This actually means

*Presented before the Southern Textile Association at Greenville, S. C.

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that we have at last been able to produce upon a preliminary scale a method of dyeing for natural colors which was very largely the only particular advantage that the majority of the artificial colors enjoy ,and as soon as we have developed this upon the large scale and are ready to place it upon the market we shall bring it most vigorously to your attention through the recognized publicity channels.

A System of Laboratory Management.

(Continued from page 160.)

17. He must arrange periodic conferences with the factory superintendent and the factory chemist, (in large plants), for the purpose of closer co-operation.
18. Together with the purchasing agent he must devise methods for securing a regular supply of the principal raw material in uniform quality.
19. He must possess or secure general information regarding the methods used in the preparation or manufacture of the principal raw materials offered to his firm.
20. He must give consideration to the future supply of the principal raw materials,—and must know where to look for suitable substitutes, in case of a sudden shortage due to argicultural conditions, or to lack of transportation facilities.
21. He should. together with the supervising chemist prepare rules for operating the purchasing section of the Laboratory Department.

The Manufacturing Department.

1. The factory chemist must plan for efficient co-operation with the factory superintendent.
2. He must know the factors which influence chemical processes. For example in the textile industry, these are: Fibers, dyes, water, chemicals, and machines.
3. He must be able to "analyze" a process into individual operations, so that he can be helpful in eliminating unnecessary operations.
4. He must study the *Time-Temperature-Concentration* factors in every process used in the factory.
5. He must devise general and specific methods for reducing waste in a given process.
6. He must discover the factors which affect the production of "seconds" and must seek to discover means for reducing the number of "seconds" or defective products.
7. He must know or devise methods for determining the best conditions for conducting a given process.
8. He must devise *chemical* methods for controlling the strength of baths or solutions used in a given process.
9. He must know or devise *physical* methods and testing machines, for determining the best working conditions in a given process.
10. He must collect and prepare all data relating to the *preparatory* processes through which the raw material passes in the factory.
11. He must give consideration to the several steps of each intermediate process used in the factory.
12. He must study the *finishing* processes, and when "defects" appear at this point he must be able to trace them to their origin.
13. He must devise methods for "re-vivifying" old baths, liquors or materials used in process, so that they may be used over again.
14. He must be acquainted with methods for reclaiming valuable constituents from old waste liquors or baths, in cases where they cannot be used over again directly in their present condition. (This would mean for example the recovery of rubber from scrap rubber goods, in a mechanical rubber plant.)
15. He should develop methods for recovering the foreign matter removed from the principal raw material, when it is passing through the preparatory process.
16. He must know how to use the articles which appear in technical periodicals so that old processes may be improved and new processes be developed. He must give attention to the technical developments in other industries.

The Selling Department.

1. The sales chemist must plan for efficient co-operation with the sales manager.
2. He must know or determine the factors which go to make a "perfect" product, so that he can examine products and determine the degree of perfection which they represent.
3. He must present to the sales manager the results of his examinations so that the latter may if necessary or desirable, use this data in his advertising campaign.
4. He must check up the quality of each shipment before it leaves the factory.
5. He must be able to assist in settling disputes relating to defective goods.
6. He must devise methods for examining competitors' products, which are brought in from the field by salesmen of his company.
7. He should devise forms for recording in a clear way, the results of these examinations.
8. He should devise forms for recording the results obtained from testing the products of his factory, before they are shipped.
9. He should record on separate forms, the results obtained from testing products made up on specification, and which failed to meet the requirements .
10. He must have a permanent record of the methods used for determining the quality of the finished product.
11. He must have a permanent record of the *defects* which must be looked for in the finished product, before it leaves the factory.
12. He must have a record of the *physical* tests which each product must stand, before it is shipped.
13. He must have a record of the *chemical* tests which each product must stand before it is shipped.
14. Together with the sales manager and chief of advertising, he should prepare collective exhibits, large and small,—which may be used by the salesmen in the field for demonstrating the quality and make-up of the various products.
15. He should have a record and a file of all specifications issued by customers and prospective customers of the company.
16. He should, together with the supervising chemist, prepare rules for operating the sales section of the Laboratory Department.

The Engineering Department.

1. The engineering chemist must plan for efficient co-operation with the supervising engineer.
2. He must have a permanent record of the methods used for the examination of coal and fuels; lubricants, oils and greases; rubber packings for water, steam and oil; paints and varnishes used as protective coatings.

3. He must know how to determine the relative value of of purification plants for boiler water.
4. He must know how to choose structural materials required for the several machines, used in the several factory processes.
5. He must devise methods of disposal for waste waters of the plant, for the purpose of preventing stream pollution.
6. He must be acquainted with centrifugal separators used in the recovery of oily substances from waste waters.
7. He must be acquainted with multiple effect evaporators used for the partial removal of water from liquid extracts.
8. He must be acquainted with hydro-extractors or basket centrifugal machines used for the partial removal of water from solids.
9. He must be acquainted with apparatus used for drying materials (a) in vacuum; (b) in hot air under ordinary air pressure.
10. He must be acquainted with filter presses used for the partial removal of liquids from solids.
11. He must be acquainted with machinery used for conveyance of solids, liquids and gases.
12. He must be acquainted with apparatus used for humidifying the atmosphere or the materials in the work-room.
13. He must be acquainted with apparatus used for impregnating, either in vacuum or at ordinary atmospheric pressure.
14. He must be acquainted with the methods and apparatus used for separating; solids from gases; liquids from gases; gases from gases; solids from liquids; liquids from liquids; solids from solids.
15. He must be prepared to investigate the relative value of floor-coverings and roofing materials.
16. He must determine the desirability of manufacturing incidental raw materials, directly at the factory where they are consumed.

The Legal Department.

1. The work in legal and official chemistry should be centralized so as to make possible, quick reference to problems in connection with the patent office, the custom house, the fire underwriters ,and the transportation companies.
2. The material must be so grouped and arranged as to be readily accessible to the chemists in the departments for purchasing, manufacturing, selling, engineering and research.
3. Attention should be given to the manner of preparing testimony for cases at law. In American practice, the expert witness is expected to testify to all facts which will benefit the case of his client. In European practice, the expert witness is retained by the court to make a complete investigation of *all* the facts.
4. The legal chemist must appreciate the difference between a "witness of fact" and an "expert witness".
5. He must know that many cases have been lost because the chemical testimony was inadequate or badly presented, so that the Jury of the Court did not obtain a clear idea of the facts.
6. Before presenting his testimony he should study all the processes through which a product passed before it was sold and found defective.
7. He must see to it that contracts and specifications are so drawn and worded as to prevent misunderstanding at a later date. This of course applies specifically to cases involving chemicals and chemical terms.
8. Patent specifications: he must be able to prepare specifications for chemical processes and chemical products, in such a way that the patents may be basic and fundamental.
9. He must understand the terms: *validity, anticipation,* and *infringement.*
10. He must know how to prepare testimony for importers of merchandise, where the identity of goods is in dispute.
11. He must understand the methods used in the classification of merchandise according to the Tariff Act.
12. He must bear in mind that the meaning of words used in the Tariff Act is interpreted by the Court and *not* by the expert witness. The latter may, however, testify to the meaning of words in the trade.
13. He must know the meaning applied by the Courts to terms in the Tariff Act: *"manufactured article"; "similitude"; "component part of chief value."*
14. He should collect and file data on occupational diseases and their relation to factory accidents.
15. He should collect and file data on fire hazards in the factory, due to improper storage or transportation of dangerous gases, liquids or solids.

The Development Department.

1. The work in Research chemistry should be centralized so as to make possible the fullest use of this section by the other departments of the corporation.
2. The research chemist must devise simple and efficient methods for abstracting scientific and technical journals, in search of new materials, processes and products.
3. He must devise forms for recording the history and technical record and results of each investigation.
4. He must possess a working knowledge of the physical instruments used in making investigations.
5. He must have a fairly complete knowledge of all published processes used in the industry.
6. He must be acquainted with the special machinery used in the usual factory processes.
7. He must be able to determine whether or not a furthe investigation is justified, even though negative results have been obtained.
8. He will inaugurate research for the purpose of preparing new substances or producing new products.
9. Together with the factory chemist he conducts technical researches so that the laboratory results may be used in the production of a commercial product.
10. He devises special laboratory methods, such as: Determining the permanence of dyes on textile materials when subjected to various influences.
11. He devises special methods such as: Determining the strength and elasticity of yarns and fabrics, before and after treatment with certain chemical solutions.
12. He must be able to determine the factors which influence the quality of the product after it leaves the factory. (The "ageing" of rubbergoods; the "fading" of dyes; the "drying-out" of leather.)
13. The research section of the laboratory should investigate all defects and trace them to the process which caused them, or the particular factors which help to develop a defect.

14. The research chemist must devise methods for utilizing the waste products of the factory.
15. He should, together with the supervising chemist, prepare rules for operating the research section of the Laboratory Department.

Microscopes For Use in Chemical Laboratories.

The problems which the chemist is called upon to solve where the microscope is of great value, if not actually essential, are so diverse in their nature and the materials to be examined so varied in size, outward form, structure and composition, that it is safe to say that no single instrument will ever be constucted which will meet all the requirements and fulfill all conditions. Before deciding upon any given style or model of instrument the intending purchaser should, therefore, first carefully consider the kind of work his instrument will most frequently be called upon to perform.

A microscope for microchemical analysis and applicable to the ordinary problems arising in the chemical laboratory should fulfill the following requirements:

The stand should be substantially built so as to be easily and safely carried about. It should permit the attachment of the usually employed accessories, such as a mechanical stage, Abbe condenser, camera lucida, polarizing apparatus, etc. A hinged pillar allowing the inclination of the microscope is a valuable feature and a great convenience. It is desirable that the instrument be entirely finished in black and have as few bright reflecting surfaces as possible.

There should be a coarse adjustment by diagonal rack and pinion of as great range as possible. When the movement of the rack is short the usefulness of the microscope is greatly restricted, since low powers can not be used with thick objects. A sensitive fine adjustment is also an essential, and if the fine adjustment is provided with micrometer screw and graduatel head, micrometric measurements of thickness are possible and refractrometric determinations are simplified.

The body-tube carrying the objective and eyepiece should be of sufficient diameter to permit the microscope being used for photography, and it should be provided with an inner graduated draw-tube whose lower end is tapped with standard or universal thread for the attachment of very low power objectives or of amplifiers.

The stage should be circular, rotating and provided with centering screws, with small milled heads. The circumference of the stage should be graduated in degrees and the surface covered with hard rubber. The stage must be constructed in such a manner as to be easily removed by simply loosening the centering screws in order that thick objects may be examined, various heating devices employed, and that opaque objects to be studied by means of vertical illuminators may be brought into focus on the sub-stage without interfering with the proper adjustment of radiant or illuminator.

The sub-stage should consist of a simple ring, raised and lowered by screw or rack and pinion, and must permit of being swung to one side from under the stage. This ring carries condenser, polarizer, auxiliary stage, heating devices, etc. The ring should be tapped at one side and fitted with a thumb-screw or with some other sort of locking device to hold firmly in place the accessories fitting into the sub-stage ring. The substage ring should also be provided

YOU can easily flood dingy, light-absorbing factory walls and ceilings with

The Paint that Sparkles O'er With Light

CHAFFEE'S Mill White

More Light
Lowest Ultimate Cost
Permanent Finish

This paint has proven its efficiency in the leading textile mills everywhere. May we have an opportunity to prove it to you?

Write for Descriptive Booklet and Paint Panel.

THOMAS K. CHAFFEE CO.

Providence, R. I.

with a slot or other conveniences for lining up the polarizer. If the microscope is to be used chiefly for observation at high temperature, polarization by reflection is best.

It is essential that the microscope be fitted with attachments for study with polarized light including converging as well as plane.

The instrument must be provided with a mirror, plane on one side, concave on the other, of as large diameter as possible, which permits turning over from plane to concave side when the microscope is in a vertical position without the necessity of tipping the pillar. The mirror should be mounted on a swinging bar to provide oblique light and it is desirable that the bar have an extension arm in order that the mirror may be swung to give oblique light above the stage.

At least two of the oculars (a high power and a low power) must be fitted with cross-hairs and stud fitting into a notch or slot in the upper end of the draw-tube.

The objectives should be of exceptionally long working distance and in combination with the eyepieces should yield a magnification of from 15 or 20 diameters to 300 or 350 diameters for ordinary work.

The instrument should be of as simple construction as possible and should permit the easy and inexpensive replacement of parts damaged through accident.

The foregoing paragraphs are extracted from one of the chapters of a new book on Elementary Chemical Microscopy by Emile Monnin Chamot, B.S., Ph.D., Professor of Sanitary Chemistry and Toxicology at Cornell University. This book, which is published by John Wiley & Sons, Inc., New York, not only treats on microscopes for use in chemical laboratories, but also covers such subjects as "Objectives and Oculars;" "Illumination of Objects and Illuminating Devices;" "Uutramicroscopes and Apparatus for the study of Ultramicroscopic Particles;" "Examination of Opaque Objects;" "Laboratory Equipment;" "Quantitative Analysis by Means of the Microscope;" "Characteristic Microchemical Reactions of the Common Elements and Acids when in Simple Mixtures;" and many other subjects of interest to the laboratory chemist. Price $3.00 net.

Stardardizing American Colors.

Following is a copy of the second letter sent out to those who have signified their willingness to attend the conference to be held on January 22-23 to consider the stardardizing of American colors and other questions. As with the first letter, the author is H. G. McKerrow, of the textile department of E. F. Drew & Co., Inc., New York.

"Arrangements have been definitely made to hold the Conference for the consideration of the best means for standardizing American dyestuffs, at which you have kindly agreed to be represented, on January 22nd, and if necessary, January 23rd next, in Rumford Hall, the Chemists Club, 50 East 41st Street, New York City.

"It is hoped that at this conference, at which about two hundred of the leading manufacturers of and dealers in intermediates and dyestuffs have expressed their intention of being present, a consolidation of the new industry may be effected, resulting in the formation of a national trade association, which shall have the interests of the industry permanently in its care, and which shall be representative of the dyestuff trade as a whole.

"No preliminary organization has been attempted and the ultimate developments will be entirely in the hands of those present at the conference. It is hoped, however, that gentlemen present will be prepared to make suggestions affecting the industry, such as the tariff arbitration of disputes, etc., as well as the question of the standardization of colors, and that a full and free interchange of ideas looking to the permanent intrenching of the industry may be obtained.

"The Liberty Loan."

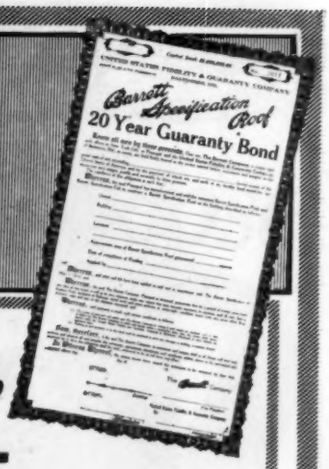
(Continued from page 162.)

down to this time, and they will do their full duty in the present National crisis. They have advised their depositors to buy Liberty Bonds, and they have encouraged and will continue to encourage in their people a spirit of thrift and economy. They are in touch with the pulse of the people, as well as the trend of national affairs, and they are keenly alive to all that concerns the safety, stability, and welfare of this great Government and this great people. I have absolutely no doubt but that all financial demands of the Government in the future will be fully met by the people, and if a dozen Liberty Bond issues are found necessary to overthrow autocracy, the aroused conscience and sense of right in the American public will open the purses of the rich and poor alike, and the money will be forthcoming. I believe this for the reason that the people are more and more coming to realize the stupendous task this Nation has undertaken, and this realization has aroused a determination at any cost to succeed in its performance.

This great country of ours has a future awaiting it, of which the most optimistic and sanguine among us can scarcely conceive. It is evident to the thinking man, who judges the future by the past, and in the light of the present, that our country has a destiny full of great things, and we will measure up to the consequent responsibilities. America will not only be a stable quantity in the future, as she has been in the past, but she will be a world-wide arbiter of international disputes, the champion of peace, the messenger of hope to forlorn Nations, now grappling with the iron heeled invader on the outside and threatened bankruptcy and revolution inside. Our hearts are moved by the contemplation of this grand mission, and our hands, set to the task, will ever be found ready and willing to carry it forward to full realization.

Tho' it undoubtedly pays to advertise, the greatest asset any firm can have is a corps of enthusiastic customers who return year after year with increasing orders. That really is the best "ad" any house can have. It means that years of trial and experience with a staple on work-bench and machine have proven it beyond a doubt to be efficient. It is surprising how many successful textile men order their special supplies from the Arabol Mfg. Co., 100 William St., New York City, and do so year in and year out. Satisfactory experience with Arabol products has made them enthusiastic customers.

Barrett Specification Roofs



In San Antonio, for instance—

IN EVERY American city the principal new buildings are covered with Barrett Specification Roofs. On the large flat areas of such edifices this type of roofing wins on the figures, being low in its first cost, permanent, reliable, and having no maintenance costs whatever.

In San Antonio, for example, the principal new buildings of the last year are shown here—three handsome schools, a power-house, a large grocery, a warehouse, a large publishing-building — and they all have Barrett Specification Roofs.

All of these roofs carry Barrett 20-Year Guaranty Bonds. The procedure is as follows:

The owner puts into his building specifications the clause, "The roof shall be laid according to The Barrett Specification dated May 1, 1916, and the roofing contractor shall secure for me the 20-Year Guaranty Bond therein mentioned."

Only competent roofers can obtain the bond and Barrett inspectors visit the job to see that the specification is followed.

On their certification of the contractor's due compliance with The Barrett Specification, the 20-Year Guaranty Bond is duly issued by one of the largest surety companies in America.

The bond costs the contractor and the owner nothing. It is issued in the interest of good materials and good workmanship, and we pay for it.

20-Year Guaranty Bond

The 20-Year Guaranty Bond is given on all Barrett Specification Roofs of fifty squares and over in all towns in the United States and Canada with a population of 25,000 and over, and in smaller places where our Inspection Service is available.

Our only requirements are that the roofing contractor shall be satisfactory to us and that The Barrett Specification of May 1, 1916, shall be strictly followed.

Further information and copies of The Barrett 20-Year Specification, with roofing diagrams, sent free on request.

The Barrett Company

New York Chicago Philadelphia Boston St. Louis Cleveland Cincinnati Pittsburgh Detroit Birmingham Kansas City Minneapolis Nashville Salt Lake City Seattle Peoria

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Buildings illustrated, reading from top, are: Power-House of San Antonio Gas and Electric Co.—Roofers: Peden Roofing Co., Houston, Tex. **Lamar Street School.**—Archs: Adams & Adams; Roofers: Turner Roofing & Supply Co. **John Fest Building.**—Arch.: Atlee B. Ayres. Roofers: Turner Roofing & Supply Co. **Daily Express Building.**—Archs.: August A. Huff Co. and Alfred Giles Co. Roofers: Turner Roofing & Supply Co. **Main Avenue High School.**—Arch.: Ralph H. Cameron; Roofer: Henry Vodrie. **Freight Warehouse of San Antonio Belt and Terminal Railway.**—Roofers: Turner Roofing & Supply Co. **Breckenridge High School.**—Archs.: Alfred Giles Co. and C. V. Seutter; Roofers: Turner Roofing & Supply Co.

Notes About Men You Know.

LIEUTENANT WILLIAM JOHN ROOKE, formerly of Clevealnd, Ohio, and for several years past Business Manager of COTTON, was commissioned in the Field Artillery division at Fort Oglethorpe from the second officers training camp. This adds one more star to the service flag of the W. R. C. Smith Publishing Co.

G. A. SCHNEIDER, formerly of the San Francisco sales organization of the Western Electric Co., has been appointed manager at their Buffalo house, succeeding J. W. Tabb, who has been transferred to their New York house.

WYCKLIFFE DRAPER, son of George A. Draper of the Draper Corporation, Hopedale, Mass., has been commissioned a captain in the United States artillery. Early in the war he enlisted in the British army, and was a lieutenant in the Royal field artillery. He was wounded by shrapnel last July and returned to this country. Upon his recovery he applied for a commission in the service of the United States.

H. G. LEIGH has resigned as overseer of finishing at the Fort Mill (S. C.) Mfg. Co. to become overseer of weaving at Hamilton-Carhartt Mills No. 1, Rock Hill, S. C.

AUGUST KLIPSTEIN, JR., son of August Klipstein, President of A. Klipstein & Company, 644 Greenwich Street, New York City, was one of those receiving a commission as First Lieutenant in Infantry at the Officers Training Camp at Plattsburg New York on November 24th.

JOHN D. W. MCMANUS, Paymaster of the Lincoln Mills, Fall River, Mass., left recently for Ft. Slocum, N. Y.

FRANK E. PURDY, recently of the No. 1 Tecumseh Mills, Fall River, Mass., is now overseer of carding for Green & Daniels, Inc., Pawtucket, R. I.

FORREST B. GARDNER, formerly in charge of the cost department of the International Cotton Mills at LaGrange, Ga., is now superintendent of those mills.

J. A. BAUGH, JR., formerly superintendent of the International Cotton Mills, at LaGrange, Ga., has been made agent of those mills and also the International Cotton Mills plant at Hogansville, Ga., relieving A. R. Dickinson, of the Lockwood-Green Co., who is thus enabled to devote his entire time to other mills controlled and managed by this company.

DAVID R. HARRIMAN, JR., the well known mill superintendent has accepted a position with the Southern office of Dicks, David & Co., Inc., manufacturers of aniline dyes and chemicals, with main office at 302 Broadway, New York City. Mr. Harriman will make headquarters at Greensboro, N. C.

CLYDE C. ARMSTRONG has been named assistant manager of the Armstrong chain of mills in Gastonia and will take up his new duties at once. His father, Col. C. B. Armstrong, is general manager of these mills. Mr. Armstrong is one of Gastonia's rising young business men. He is a member of the firm of D. M. Jones & Co., cotton brokers, and for the past two or three years has been actively connected with that firm.

R. G. MIMS has resigned as general overseer at Anchor Duck Mills No. 2, Rome, Ga., and accepted position as overseer of weaving at Ospray Mills, Porterdale, Ga.

F. C. HENDERSON, from Columbus, Ga., succeeds T. H. Fairchild as superintendent of the Jonesboro (Tenn.) Yarn Mill.

R. S. CRAWFORD, Assistant District Manager of the Certain-teed Products Corporation, at St. Louis, has been appointed General Purchasing Agent of the company, effective Jan. 1st, with headquarters at St. Louis. Mr. Crawford has had many years of experience in manufacturing and merchandising paints and varnishes, having embarked into this line when he was twenty-one years old. He has been connected with several large and well known paint and varnish concerns, among them being the Acme White Lead and Color Works of Detroit. In 1908 the Acme Company

the Kaiser's Fire Bugs are loose

PROTECT ?

YOUR property *OR* LOSE it

Fire bugs, under orders from Berlin, are at work night and day. In October incendiary fires smashed al records. Rochester suffered a $1,000,000 fire; Kansas City a $1,500,000 stockyard fire, 15,700 cattle and hogs destroyed; Brooklyn a $2,000,000 elevator fire, Baltimore a $5,000,000 fire. $10,000,000 in food was swallowed up in October, thanks to incendiaries.

Pyrene
KILLS FIRE
SAVES LIFE

But What Can Be Done

to make cotton mills or warehouses safe? To prevent fire is neither difficult nor costly. You can, at once and at moderate cost, rid yourself of 99% of the fire danger.

First, get able-bodied, vigilant watchmen and equip them with Pyrene extinguishers to kill incipient fires, Pyrene watchman's clocks to check their work, and revolvers. Then they are ready to kill both fire and incendiary.

Then, equip every mill, factory or warehouse with Pyrene—one to every 1000 square feet. Pyrene keeps the little fires from getting big.

Get chemical engines. These have saved many a building from destruction. There is a Pyrene Engine especially adapted to your needs.

Get hose to handle the big, destructive fires. This equipment doesn't cost a fortune, but it makes property almost as safe as the fire station itself.

FIRE IN THIS PLANT
MAY PUT EVERY MAN OUT OF WORK
HELP THE MANAGEMENT PROTECT
YOUR JOB NO SMOKING

Finally, teach workers what fire means. Display this sign everywhere. *Now, decide which*—protection *or probable loss.*

Pyrene Manufacturing Company
52 Vanderbilt Ave., New York City
Every Appliance for Fire Protection.

ZAVON is a solvent for the textile industry. It can be used on all kinds of animal and vegetable fibre with absolutely no injurious effect on the fibre or the receptacle in which it is used.

The knit goods trade particularly are constantly troubled with oil spots, dirt and graphite, some mills getting as high as 30% spots in hosiery, while the underwear manufacturer is almost as badly off.

Soap will remove light vegetable oils, but is not satisfactory for the mineral oils and is worse than useless on graphite.

ZAVON
The Textile Solvent

ZAVON
The Textile Solvent

Zavon is the natural solvent for such foreign matter. It contains one of the most powerful solvents known, and its action on fats, oils, and waxes is almost instantaneous. **Zavon** will reduce your spot account 99% at a very slight cost. It gives a better hand and body to the goods than any other similar product in use today and the unevenness of shade to the finished dyed fabric due to improper circulation and penetration is reduced to a minimum where **Zavon** is used in the preparatory treatment.

We shall be glad to furnish a sample for trial on request.

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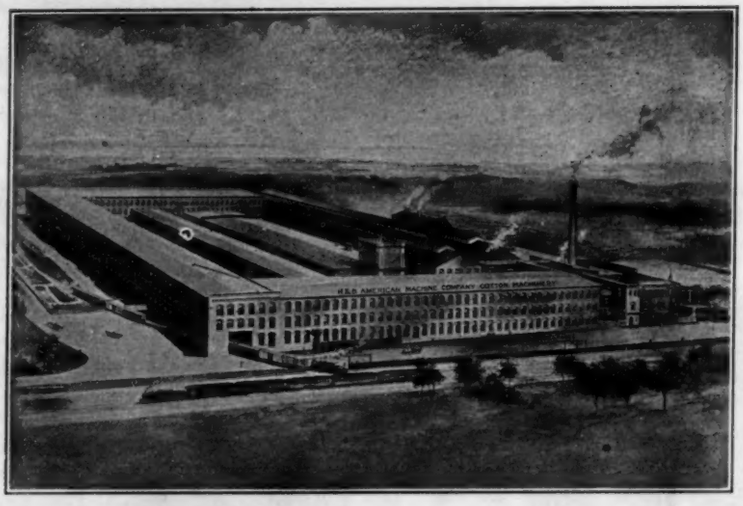
Boston Office
161 Devonshire Street

Southern Offices
814-815 Empire Bldg.
Atlanta, Ga.

COTTON MACHINERY

Opening and Picking Machinery

Card Room Machinery



Spinning Room Machinery

Twisters for Wet or Dry Work

With Band or Tape Drive

H. & B. AMERICAN MACHINE COMPANY
PAWTUCKET, R. I.

sent him to St. Louis where he acted in the capacity of their branch manager until his connection with the Certain-teed Products Corporation in 1915. His duties in connection with the Certain-teed Co. have been broad and varied, and owing to his knowledge of and experience with raw materials, and his excellent work in the discharge of his general duties, he has been promoted to the new position. The rapid growth and expansion of the company within the past few years, has necessitated a larger organization in the Purchasing Dept. of the Company. The addition of the Mound City Paint & Color Co. and the Gregg Varnish Co., together with the purchase and enlargement of a Felt Mill at Niagara Falls and the addition of a Felt mill at San Francisco, are some of the factors requiring a more highly developed and centralized Purchasing Department at St. Louis, over which Mr. Crawford will have full charge. All of the purchasing of the company is supervised by the General Purchasing Department at St. Louis, but much of the purchasing heretofore done by the plants will now be done by the General Purchasing Department.

A. J. HENDERSON, aged 71, died at his residence in Hampton, Ga., on the morning of December 8. Mr. Henderson was the founder of the Henderson Manufacturing Company, and had been its active president for the past twenty years and was interested in and promoter of several other business enterprises, and was a well known and public spirited man. He is survived by his widow, Mrs. Irene Henderson; six sons, P. A., of Miami, Fla.; W. Z., A. D., A. M., Glenn and J. L., and one daughter, Mrs. W. A. Wilson, all of Hampton.

C. A. MACE has been appointed as the head of the textile department of the Marden, Orth & Hastings Corporation, succeeding H. Gardner McKerrow. Mr. Mace has been for eight years with the Badische organization at the head of the Chicago offices of the latter concern. He is a graduate of the Massachusetts Institute of Technology.

JAMES H. SHINE, president of the Hope Knitting Co., Cohoes, N. Y., and one of the most prominent figures in the knit goods industry in eastern and central New York, has been designed as government supervisor of production in the manufacture of underwear for government forces in the district comprising Cohoes and vicinity.

LEFT TO RIGHT; ELMER H. MORNINGSTAR OF W. F. FANCOURT & CO., INC., AND WILMER C. DUTTON, SALES MANAGER, TOLHURST MACHINE WORKS, TROY, N. Y.

G. M. FISHER, formerly with the Paramount Knitting Mills, Kankahee, Ill., is now second-hand in spinning on night run at the Cherokee Spinning Co., Knoxville, Tenn.

J. J. ROBERTS, formerly overseer of weaving in Barrow Cotton Mill, Winder, Ga., has accepted position as overseer weaving at Pelham, Ga.

T. C. BRANSON has changed from overseer of Weaving at Springstein Mills, Chester, S. C., to return to Hamilton-Carhartt Mill No. 2, at Rock Hill, S. C.

G. V. TALLENT has accepted position as superintendent of the White City Mfg. Co., Athens, Ga.

P. A. CARPENTER has resigned from his position as Superintendent of the Albion Cotton Mill, at Mt. Holly, N. C., to accept a similar position with the Vivian Cotton Mill Company at Cherryville, N. C.

ELLIS T. GURRY, well known in cotton mill circles in Rhode Island and Massachusetts, is now "Somewhere in France." Friends wishing wishing to write to him may address him in care of Battery A, 103d Regt. Field Artillery, American Expeditionary Forces, Via. New York City.

GEORGE W. FORSTER, who has recently come to Atlanta as Southern Manager for the new branch office of the Anchor Post Iron Works, 165 Broadway, New York. Mr. Forster has opened an office at 916 Empire Building.

J. H. BAGWELL has been transferred from overseer of weaving at the Hamilton-Carhartt Mill No. 1 to superintendent of Hamilton-Carhartt Mills No. 3, Elberton, Ga.

W. D. MCCOMBS, superintendent of Athens (Ga.) Mfg. Co., is suffering from injuries received when his car turned over with him on the Commerce road. He had a party of eight with him and in rounding a curve, known as "Dead Man's" curve, the car turned completely over, alight back on its wheels. Mr. McCombs was the only one of the party hurt. He received a broken and dislocated shoulder, numerous cuts and bruises on face and head.

CHARLES S. ROBBINS has been promoted from the position of sales manager of Wadsworth, Howland & Company of Boston to that of general manager of the factories of the company. Mr. Robbins is particularly fitted for such a position as he has had great experience on the road and inside in every department and detail of the business. As his experience as a salesman fitted him to be sales manager, so his accumulated experience in that position particularly qualified him to take the position of general manager of the factories, where the proposition is to speed up and increase efficiency. Consequently Mr. Robbins' aim will be to create a self-winding and perpetual motion organization at the factory which will continue without his constant attention, enabling him to devote a portion of his time to other matters.

EUGENE FELTON, former assistant general manager, has been promoted to the position of sales manager, succeeding Mr. Robbins. Mr. Felton is especially fitted for the position, having had wide experience as a salesman for the concern for many years.

These readjustments are primarily for the purpose of relieving General Manager Arthur P. Felton of a mass of care and detail which should be distributed among other individuals. Thus Mr. Felton will be relieved of the details of the factories and the details of the branch houses, which have been placed in the hands of Fred Lantz. In Mr. Robbins, Mr. Eugene Felton and Mr. Lantz, General Manager Felton has able lieutenants who are competent to assume the new responsibilities with which they have been crowned.

LEFT TO RIGHT; J. H. HADDOCK, SUPERINTENDENT, STONEWALL, (MISS.) COTTON MILLS, AND W. PAUL BOLEN OF THE NEWBERT COLOR AND CHEMICAL CO.

W. C. WALDO, representing the Veeder Manufacturing Company of Hartford, Conn., was a recent Atlanta visitor. Mr. Waldo was looking over the Southern territory prior to attending the Exposition at Greenville where he had charge of the Veeder Company exhibit.

B. M. STALLWORTH, one of the prominent millmen in the South, and manager of the Gainesville Cotton Mills at Gainesville, Ga., and the Pacolet Mfg. Co., at New Holland, Ga., dropped dead at his home at New Holland, at 1:30 o'clock Sunday, Dec. 23d. Heart failure was the cause assigned.

Mr. Stallworth had just returned from a trip to town, and had stepped into his bathroom to prepare for dinner, when his wife, in the next room, heard a crash. She rushed into the room and found her husband prostrate upon the floor. She then ran to the home of a neighbor, Superintendent D. W. Anderson, for assistance. When members

(Continued on page 197.)

How Other Men Manage

Practical Discussions by Cotton's Readers on all varieties of Mill Subjects

Brittle Card Wire.

EDITOR COTTON:

In the experience I have had with such troubles as "W. L. D." mentions, I found that the wires were eaten up with rust. This will happen more often on old card clothing. Some time ago I had the misfortune to get a lot of my clothing wet from an overflow of water from the floor above the card room, and it was 5 to 10 years before all of the effects of the water showed up, then one by one they would show up, being stiff at first and then to break out and by pressing down with the fingers, the wires would break off at the root, or foundation of the wires.

This can be caused from different things. I have had some break out that I did not think had ever been wet, and in re-drawing the old card clothing, I find a good deal of it stiff; it appears to have a brownish, or rusty, color. This I attributed to the sweating of the cylinders at different times, the clothing absorbing it, and the moisture working its way through the clothing. Then it might be from unknown or invisible evaporation of oils, oil spots from the beaters, spots of oil lodging in a lump in the laps, and going to the cylinder and imbedding itself in a spot on the cylinder, by and by this will rot the clothing and in rotting the clothing will cause the wires to weaken and break out.

Too much humidity in a card room will cause rusty clothing. Having too many windows open on a damp day will also tend to rust the clothing, moisture falling on the flats works its way into the cylinder clothing. The open places of the flats as they become worn, will leave a place for moisture to be sucked in to the cylinder should any be present, because of the fact that the cylinder creates a draft in revolving. This draft should be controlled and not allowed to blow-out around the card, if it does it blows out the fibers that should be retained in the stock as much as possible.

This sounds like a little thing, but small things sometimes make our biggest troubles. Carder (Ga.)

EDITOR COTTON:

I think "W. L. D." will find that the foundation of the clothing is hard and brittle instead of the wire. The clothing that gets hard is what is known as rubber faced clothing. The rubber vulcanizes from several causes and not only hardens itself but hardens the rest of the cloth foundation behind it; then the wire has no give in the foundation as the elasticity of the foundation is gone leaving the wire just like it were in a vise. The grinding rolls then bend it one way, and the cotton, when the card is working, bends the wire back the other way; this constant bending backward and forward finally breaks the wire off even with the foundation. P. N. (Ala.)

Lumpy Slubber Roving.

EDITOR COTTON:

It is conceded by the foremost authorities on such subjects, that there is no industry in which so much variety of opinion will be formed regarding the best methods of arriving at certain results as in the cotton mill business. Therefore, if any of us who contribute to the practical discussion department of your columns fail to agree on details and methods, we may regard it as merely a matter of opinion and not as a matter of more or less efficiency in handling the problems in question.

It is a matter of great convenience and a fact to be appreciated, that we are afforded the opportunity of exchanging our views through the pages of a magazine like COTTON.

In the management of a room, it is the small things that the better paid men are entrusted to find. If a lineshaft falls the sweeper is sure to see it immediately. The small things that do not show so plainly to an inexperienced eye, if neglected, eventually cause us the most trouble.

I am going to mention a point or two regarding the care of revolving top flat cards and also endeavor to answer a question asked by another reader "Wingo, S. C." in the November issue. One of the principal objects of the card is to remove, so far as is possible all the impurities left by the picker and to accomplish this purpose with as little sacrifice of the good stock as is consistent. As the attainment of this object is largely due to the way the mote knives perform their work, the manner in which they are set is very important. The distance usually ranges from a No. 5 to 17 guage. It is my opinion they should be as close as they can be set without actually touching the licker. However the most important point as to the quality and quantity of motes, assuming that they must be reasonably close, is the angle of these knives. If set so that the heel of the upper knife is closer than the point one can be sure that no good cotton will pass out. On the otherhand more "fat" motes will pass on with the stock, thus throwing more work upon the flats and the character of the motes ejected will be like crumbs of smoking tobacco.

Conversely, if the point of the upper knife is set with heel too far away, the mote box is sure to be liberally sprinkled with a film of good cotton.

A very good setting is to run them as far forward as the horizontal screws will permit and give the upper knife an angle of 70 degrees, setting them to the licker by means of the screws at the bottom of the brackets. Care should be taken to have them parallel to the licker shaft and not diagonally across the face of the licker.

Another point; the tension of the flat chains should be kept reasonably tight at all times. If allowed to get slack, the flats nearest the licker will turn away from the flexible

DU PONT AMERICAN INDUSTRIES

DU PONT

Established 1802

Du Pont American Industries

This organization of industries exemplifies a new epoch in world commerce—the era of amalgamation of related industries as contrasted with the prior era of concentration on the development of a single industry.

Popular sentiment and law oppose the trust idea—the control by one concern of a majority of the nation's industries in one line—but industrial progress demands and welcomes the idea of using the experience, capital, organization and facilities of a successful business to develop other industries that are related to it either in manufacturing or selling problems.

Du Pont American Industries are American in origin, financing, management and operation. No allegience is paid to foreign capital or control. They are crystallized around an aggressively progressive manufacturing institution showing an unbroken record of 116 years of constant development along practical lines of industrial manufacture, purchase, finance and sales; and which has through all of its history been a loyal supporter of American affairs and of the Government of the United States. The fair attitude of the Company toward all lines of allied business and toward the buying public has permitted it to establish its trade-mark, the Du Pont oval, as a positive guarantee of quality and service, which guarantee is now extended to all its lines of endeavor.

The permanency of this guarantee is assured through the ample financing of all interests; through the ability and efficiency of engineering and operating departments; through a purchasing department that searches the world for the best raw materials; and through a sales department that makes detailed studies of domestic and export needs, and of the most economical methods of filling wants.

The different Du Pont industries are all, in a way, separate and distinct, but have as common bonds the intimate interlinking of the various highly specialized chemical units, and administrative control. No separate unit is primarily dependent upon the others, and the various materials manufactured by any one unit are in no way by-products of other units, but are in all general classes, specifically manufactured for the purposes for which they are sold.

The following major items will show briefly the intimate relation of all units of Du Pont American Industries, and the capacity, through properly co-ordinated plants, to take an active part in meeting foreign competition in times of peace, by furnishing the world with standardized American products of proven worth.

DU PONT

DU PONT AMERICAN INDUSTRIES

EXPLOSIVES Chemistry enters most intimately into the manufacture of all classes of explosives, from the ordinary black powder of historic fame and modern use, through the dynamites, permissible explosives, sporting and military powders, to the most delicate of fulminating detonators. Acids, nitrates, stabilizers, absorbents, nitrated cotton and bases are required. Industrial explosives of the classes enumerated are absolute essentials to mining and to the iron and steel industries, on which all industrial and much agricultural development depends.

FABRIKOID The nitration of cellulose which is the base of the manufacture of modern explosives, is at the same time, when properly compounded with various colors and dissolved in much the same class of solvents, the main coating for leather substitutes, the demand for which is rapidly increasing.

PYRALIN A similar connection exists between Pyralin and the other products mentioned. Here, too, the nitration of cellulose is the principle on which the business is built.

PYROXYLIN LACQUERS Etc. Pyroxylin lacquers, enamels, split leathers, leather substitute solutions and a considerable variety of other compounds also find their origin in the nitration of cellulose and in the dissolving of the material formed. In each process similar acids and solvents and similar processes are used as in the cases already mentioned.

PAINTS Another phase of the chemical industry is the manufacture of paints. Here, also, we have use of practically the same chemicals, colors and ingredients as in other Du Pont products. It is in reality a highly specialized branch of the chemical industry.

DYESTUFFS The bases from which most of the military high explosives are derived are obtained as by-products of the coking industry and from the same source are obtained the bases from which are manufactured the intermediates and finally the dyes so much needed today to supply practically every other industry. This is the reason why all these industries fit comfortably into the general organization as separate but closely allied units.

This announcement is made by the DYESTUFFS SALES DEPARTMENT for the purpose of fixing in the minds of all, the logic of the development and the strength of the foundation upon which it rests. The construction of our dye plants is progressing satisfactorily and on schedule time; some of the more important ones will shortly come into commission; others will follow.

E. I. du Pont de Nemours & Co.,

Dyestuffs Sales Department.

Wilmington, Delaware.

The Du Pont American Industries Are:

E. I. du Pont de Nemours & Co., Wilmington, Del.,	Explosives
Du Pont Chemical Works, New York, N. Y.,	Pyroxylin and Coal Tar Chemicals
Du Pont Fabrikoid Co., Wilmington, Del.,	Leather Substitutes
The Arlington Works, 725 Broadway, New York, N. Y.,	Ivory Py-ra-lin and Cleanable Collars
Harrisons, Inc., Philadelphia, Pa.,	Paints, Pigments, Acids and Chemicals
Du Pont Dye Works, Wilmington, Del.,	Dyes and Dye Bases

DU PONT

America Must Be United

In this time of unprecedented national peril and world peril, America must be strong with the strength of unity—one nation. America must be bound together, as it is to-day, not so much by the machinery of Government, as by Ideas, held in common by all and fully exchanged, so that all the people throughout the country may understand and sympathize with one another. This is what has brought this great nation together and holds it together. This result has been accomplished primarily by the Press—particularly the weekly and monthly periodicals and business papers. These periodicals have not local or sectional bias; they go to all parts of America, and serve all parts alike; their great service is in helping to bring all sections close together into one great nation, through a common understanding.

America must not be split into a half dozen sections

Weak with the ILLS and EVILS of Sectionalism

But such a disastrous result is not only possible, but probable, unless the present law pertaining to second-class postage is repealed before it goes into effect. Postal legislation was enacted in the present Revenue Bill, which divides the country up into "zones" and progressively increases the average carrying charge upon newspapers and periodicals from 50 to 900 per cent.

These nation-binding publications are confronted with certain injury or destruction—which means loss to you personally, and loss to your country. It will destroy a large part of the periodicals. You will be deprived of the papers that have kept you informed on your country's problems, that have helped you in your work. Your children will lose the clean publications that have entertained and helped educate them. And eventually, such magazines as do survive, will cost you much more.

NO INCREASE IS NECESSARY

Last Year the Postal Department Earned a Surplus of Nearly $10,000,000

The Post Office was never intended as a tax-gathering institution. It was basically designed to give service to the people—to all the people at the same rate. The Publishers are not trying to evade taxation. They will gladly accept any rate of tax upon their profits that may be levied. Most of them have gone on record as being willing to turn over to the Government their entire net profits for the period of the war. They already pay proportionately more taxes than most businesses, but this advertisement is not designed to parade selfish troubles, but to awaken your interest in the danger of permitting the destruction or obstruction of the channels of national intelligence.

This is the time of all times when America must be a united America—one nation strong with the strength of unity.

Let Your Influence Be Used To That End

THE ASSOCIATED BUSINESS PAPERS, Inc.

The International Organization of Trade, Technical and Class Publications

HEADQUARTERS, 220 WEST 42nd STREET, NEW YORK

bend at the toe, throwing the strain upon the heel of the flat in such a manner as to bend the teeth back thus causing them to retain lumps of cotton and necessitate frequent burnishing. *This is a very important* matter since it requires very little slack in the chains to cause them to draw away from the bend fully 1-32 of an inch.

Some card men believe in setting the doffer comb close, but it is a good policy to keep it as far away as it can be and still do its work. The reason for this is, if set too close, it will comb off lots of neps and impurities into the web while if set away they would adhere to the wire to be removed by the stripper.

Now the question asked by "Wingo". He says he is having trouble with slubber roving in his mill; that it appears to be uneven or lumpy. As he is running it through just one process of drawing, very likely his trouble is that the holes in the trumpets are too large, thereby causing the webs to run too tight between the front rolls and the calender rolls and tearing at the edges, which, when twisted by the slubber, forms into lumps. If such is the case by all means get new trumpets. Such defect might also be caused by insufficient weight on the front top roll. Lumpy slubber roving can also be caused by small lumps like a piece of gear tooth or small nail head getting in the teeth of the gears that convey motion from one roll to another on either the slubber or drawing frame.

I will be glad to give any information I can on any question and will appreciate information on questions I may ask.

W. L. D. (N. C.)

EDITOR COTTON:

"Wingo" should run a lighter grain card sliver on his cards if possible. If he is obliged to make a sliver as heavy as 66-grains, then he should draft it down on his drawing frames to about a 60-grain drawing sliver. On the drawing frames is where the sliver is made lumpy by being so heavy.

A 66-grain sliver is out of proportion for a 62 hank slubber roving, but if he is compelled to run it that heavy suppose we see if we can't make it better by drafting it down. Let him try the following remedies; using the 66-grain card sliver, doubling it 6 on the drawing frames, 6.60 draft on the drawing frames, we have a drawing sliver of about 60-grains, then drafting it about 4.50 on the slubbers we have a 62 hank slubber roving. This will make the drawing sliver lighter and will be more easily drafted on the slubbers, that will help some on the lumps.

Another important thing to look out for is the distance of the steel rolls on the drawing frames. The sliver being so heavy he will have to have the rolls set wide enough for the sliver to get through and get its draft at the same time. Heavy and light sliver on drawing frames, is similar to long and short staple cotton, the shorter the staple the closer he can run the steel rolls; the lighter the sliver the closer he can run the rolls; when heavier, the wider the rolls must be set.

If "Wingo" could make a card sliver of 60-grains and keep up the stock, and draft 6.00 on the drawing frames he would overcome a great deal of his lumps; this would enable him to still use his 4.50 draft on the slubbers, which is a common draft, and one that will give good results.

"Wingo" never will get the evenness in his drawing sliver with one process drawing, that he will get with two processes of drawing and the drawing sliver not being even, the slubber roving will also be uneven.

The weights on the top rolls should be very carefully watched when running a heavy grain sliver, they are sometimes too light and should be made heavier.

The line up I have on a 64 hank slubber roving is;

53-grain card sliver;
6 doublings on the first drawing frames;
5.75 draft (or about)
6 doublings on the second drawing frames;
5.75 draft (or about)
61-grain drawing sliver;
4.38 draft on slubbers (or about)
64-hank roving.

This may not just figure out exactly as written, but its almost as it is being made, enough for anyone to get a line-up and work to it as his situation requires.

The speed of the drawing frames is good but it's out of the question to expect even work out of a one process drawing frame. T. A. D. (Ga.)

EDITOR COTTON:

In reply to the inquiry of "Wingo" (S. C.), for lack of detail, I should say that the cause of his trouble might possibly be found by elimination. In other words by finding out what isn't the cause of the trouble. From Wingo's inquiry it is evident that his trouble first appears in the slubber roving, though the cause may be found in some preceding process. It is possible, though I should say not probable, that the trouble may be found in the card.

It is evident that the work is coarse. A 66-grain card sliver with a doubling and draft of 6 would give a 66 grain drawing sliver, which would require a draft of 4.9 to make .62 hank slubber roving. Now in no case are the drafts long enough to cause any trouble. I have successfully run .60 hank roving from 75 grain drawing sliver. The stock used would probably average about 1 inch in length. This should cause no trouble provided no reworked stock is used. If reworked stock is used I would recommend that Wingo satisfy himself that the mixes are evenly and properly made. It would be well to make a special sliver from the reworked stock and run the drawing with five ends up of the good stock and one end up of the reworked stock. I have found this method of mixing reworked stocks to be the best.

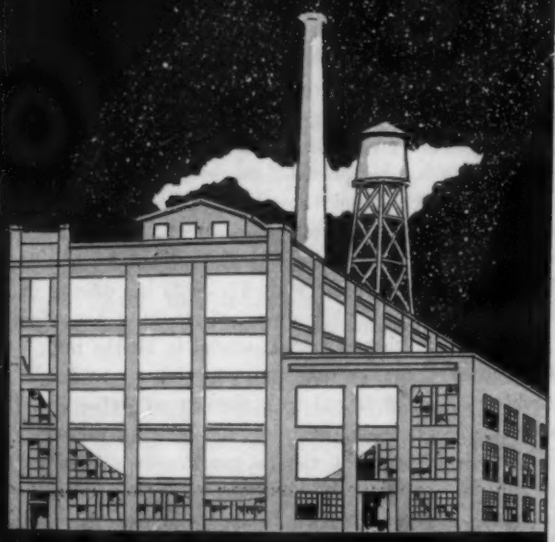
The causes of uneven and lumpy roving as produced on the slubber could be traced to a number of defects in the slubber itself. I would examine the gearing driving the drawing rolls to see that all the gears were properly set, to see that no teeth were broken out and that no gears were loose on the shafts or rolls. Then examine the three lines of bottom rolls to see if the necks were worn or loose. Sometimes, if the front bottom steel roll is sprung, it will cause uneven roving. On work such as I judge Wingo is trying to produce I have obtained good results by the following settings:

Between the centers of the front and middle rolls, a distance ⅛-in. longer than the staple of the stock.

Between the centers of the middle and back rolls, a distance ¼-in. longer than the staple of the stock.

The top leather rolls should be set so that they will not bind in the cap bars. See that the top leather rolls are in

Keeping in the Spot-Light



DIXIELITE means enlightenment to every inch of the interior of your mill. It means permanent liberty from dark walls and ceilings—liberty from the mistakes, accidents, spoilage, defective eyesight and health caused by poor light.

The one way to secure the full benefit from your whole equipment of machinery and man-power, is to make your walls pure white so those walls and ceilings will magnify and reflect every bit of the daylight and electric light to every square foot of your room.

And the one white paint that you can absolutely and permanently depend on to make your walls pure white and light reflecting—a white coating you may **know** will never crack, peel, turn yellow—is good old dependable DIXIELITE.

You want the best because the best is cheapest in the long run. You want a white coating that will **stay white.** That's why you should always demand DIXIELITE—the white that is different from the rest and which is backed by a manufacturer with over 65 years of paint making.

DIXIELITE is economical to use, as only one coat is needed over previously coated walls. Made in flat-white, semi-gloss, and gloss-white.

Be sure your painting contractor furnishes you with DIXIELITE. If you want a sample for trial, we'll be more than glad to send it to you.

Send for interesting Booklet, "Keeping in the Spotlight"

Wadsworth, Howland & Co., Inc.

139 Federal Street, Boston, Mass.

Makers of Bay State Brick and Cement Coating

BAY STATE

"DIXIELITE"

good condition and properly oiled, and with no loose bosses.

"Wingo" uses only one process of drawing and it is here that I should look for the trouble. Taking one frame at a time I should examine the draft gearing thoroughly for worn gears, rolls, or studs. With only one process of drawing too much care cannot be exercised in the operations of this process. Before setting the frame up again, give the rolls a good scouring and see that each roll finds its proper bearing at each neck. Set the bottom steel rolls as follows:

Between the bottom front steel roll and second roll (center to center) set ⅛-in. longer than the staple.

Between the second and third rolls ¼-in. longer than staple.

Between third and back rolls ⅜-in. longer than the staple.

In drafting up the frame I have found the following drafts to work to good advantage:

Allow a draft of 1.03 between calender rolls and front drawing rolls.

Allow a draft of 1.15 between 3rd and back drawing rolls.

Allow a draft of 1.40 between 2nd and 3rd drawing rolls.

Allow a draft of 3.61 between 1st and second drawing rolls.

This setting is for a draft of 6.00.

Next see that the top rolls are free and do not bind. Loose bossed top rolls would cause "Wingo's trouble.

Wingo states that his front roll on the draw frame only runs 200 r.p.m. This is a very low speed and I should say was cut down to get the best quality with only one process, but I believe that poor quality can come from too low a speed as well as from too high speed. The trouble with slow speed on heavy work is due to slippage between the bottom steel rolls and the top leather rolls, also the drawing takes place so slowly that it becomes somewhat of a plucking operation instead of a drawing operation. Wingo might try 250 or 300 r.p.m. These are not too high and with other conditions as they should be I do not think he would notice any difference in the finished yarn.

If Wingo is running leather covered top rolls I would try increasing the weight on the lines of rolls. If metallic rolls are used see that the collars are not worn so that the flutes bottom. C. H. W. (R. I.)

EDITOR COTTON:

There are so many causes for uneven roving that the question by "Wingo" (S. C.) would have to be answered by covering the work from the slubbers back to the cotton seed that is planted in the spring and with only one process of drawing, the thick and thin places could be made by the cards from laps splitting, or thick and thin places in the laps; but if the lumps are regular, it is caused either at the drawing or on the slubbers, and while there are several things that would cause the trouble on these machines, it is more than likely to be caused by the rolls on the drawing or slubber being set either too close or too far apart for the length of staple being run.

I will say at the start that "Wingo" can't hope to have entirely smooth roving with only one process of drawing, unless he is using combed stock, because any cotton has different length staples or fibers, and he can only set the rolls to suit the majority. This will leave some of the fibers too long and some too short for the settings, and as twist runs to the thin places, the roving will be more or less lumpy. The way this is overcome is by numerous doublings, unless running combed stock. I would suggest that "Wingo" set the rolls on one draw frame as close as the stands will let them come, then hold the drawing before it goes through the trumpet, up between him and the light, and see how even, or how uneven it is. Then set the rolls to what he knows is the other extreme, and look at the drawing again, and it will give him some idea about the effect of the different settings. Then pull his staple and set the rolls so the bite of the rolls will be about 1/16 inch wider than the average length of the staple.

This ought to give best results, but he should set the rolls at the setting, that makes the fibers have the most even distribution in the web when held up between him and the light. He can find the best setting on the slubber in the same way, by taking a piece of roving before it goes in the flyer and holding it between his eyes and the light. He can then tell whether or not the fibers are evenly distributed. This method is some trouble, but he can find what is making his lumpy work, for if the roving is even ahead of the flyer, and it is still lumpy, then his tension is stretching it; or if it is out from something being wrong with the gears, or rolls, it will show at either the drawing or the slubbers. But he mustn't expect it to make his roving perfectly smooth with that number of doublings, and the cotton seems to be more uneven since the growers have quit using so much fertilizer.

P. N. (Alabama.)

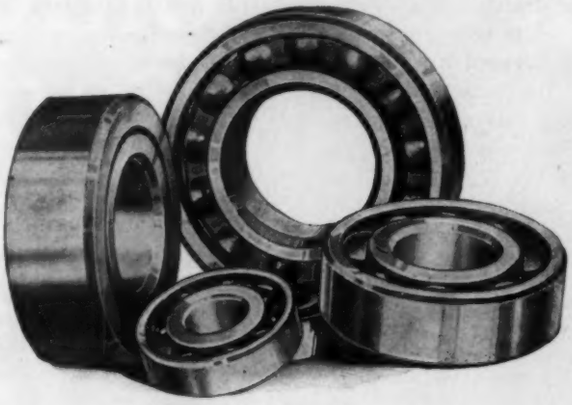
Economy Buys "Arkless" Fuse.

An announcement of peculiar interest to all users of fuses is made in a letter addressed to the trade stating that the entire fuse business of the Detroit Fuse & Mfg. Company, makers of the well known and long established line of "Arkless" Enclosed Fuses, has been purchased by Economy Fuse & Mfg. Company, Chicago.

The transaction includes the conveyance of all merchandise, materials, machinery, tools, designs, patents, good will and unfilled orders. The physical assets of Detroit Fuse & Mfg. Company, insofar as they pertained to the making of fuses, have been shipped to the Chicago plant of Economy Fuse & Mfg. Company, where the manufacture of "Arkless" fuses will be continued, production being, as heretofore, under the label service of Underwriters' Laboratories, Incorporated. One organization will produce "Arkless" Non-Renewable Fuses—"The fuse with the 100 per cent indicator"—one of the oldest standard fuses on the market, and Economy Renewable Fuses, the pioneer fuse of the renewable field.

Arrangements made well in advance enable Economy Fuse & Mfg. Company to take over the "Arkless" fuse business without interference with deliveries of either "Arkless" or "Economy" fuses.

It is to be noted that the "Square D" line of enclosed safety switches remains the property of Detroit Fuse & Mfg. Company, who will concentrate on its production and marketing.



SCIENCE has reached such a stage that most machines have not attained their highest development until they are equipped with ball bearings.

¶ Naturally so—because only by reducing friction and wear to a minimum do machines become most effective.

¶ New Departure Ball Bearings are your logical choice, because they provide strength, stamina and serviceability, as well as eliminating friction evils.

¶ Back of the New Departure product is a remarkably competent organization for co-operating with you in the working out of your own particular problems.

¶ We can save you needless experimenting if you will send us your blue prints and information regarding character of work, speed and load data, etc.

THE NEW DEPARTURE MANUFACTURING CO., BRISTOL, CONN.
Conrad Patent Licensee.

NEW DEPARTURE
BALL BEARINGS

279

Announcement.

We are presenting this new department at the beginning of Nineteen Eighteen because we feel that from this time on, export trade will become more and more a part of American business. We believe that manufacturers of textiles should devote more time to the study of trade conditions abroad, even though they do not at present contemplate engaging therein. Therefore we shall present from month to month discussions of those subjects in which you readers express an interest. Letters containing suggestions will receive prompt attention and we shall be glad to have answered any questions pertaining to the export field.

What was to have been the leading article in this department, could not be secured in time because of the author's almost continuous work in Washington and the East in the interest of moving export freight through Southern ports. This article will appear in a later number, as will others, all written by men who are in actual daily touch with export conditions and are thus qualified to write authoritatively on any subject suggested.—THE EDITOR.

Export Trade a Vital Necessity.

I hear of some manufacturers who apparently think that the world is coming to an end, who have been frightened by the injudicious and misleading, not to say ignorant head lines appearing of late in many of our daily papers. They seem to think that there are no more ships going to be available for transporting American exports, that the United States Government has commandeered all of our boats and that there are no others. This is simply nonsense of the most absurd description.

Do you know that even today only 26 per cent of American exports is carried in American vessels? Do you know that today 65 per cent of our exports is carried in British ships, and the balance, that is about 9 per cent, is carried in ships flying various other foreign flags? Some people seem to be laboring under the impression that without American ships our foreign trade will be extinguished.

The United States Government in commandeering American vessels afloat and building is not going immediately to withdraw all these vessels from the services in which they have been engaged or are expected to engage. Nothing of the sort is likely to happen. The Government has simply taken over these vessels to be under its control and is now allowing and will continue to allow the present agents for these vessels to operate them just as they have been operated, receiving a commission from the Government. So general has been the misapprehension of these conditions that the Southern Pacific Company, for example, only the other day had to send out a printed circular to reassure shippers that their boats were not going to be withdrawn from their New Orleans and Galveston services. Our newspapers may be partly to blame because of their hurried and misleading head lines, but anyone who has read the official statements will understand the truth of what I have just written. The commandeering of ships simply means that those ships are at the Government's disposal.

England has been commandeering British ships since the very first days of the war. When certain vessels have been needed they have been taken and used for Government purposes and there are vessels coming into the port of New York today which have so been used by the British Government two or three times over for short periods at a time. And everyone knows it is British ships which today continue to transport about 80 per cent of the ocean borne traffic of the world. Dire as have been England's needs, she has left thousands of British vessels to carry the exports of England and the exports of the United States and other countries. The great P. & O. Line has been running regularly from England to China and Japan and Australia in spite of submarines.

There should be no fear of any serious derangement of our present shipping facilities because the Government has commandeered American vessels, or even if now and then the Government has to take a few ships temporarily from their regular services to employ them on special errands across the North Atlantic. Such derangements will be temporary and will hardly be noticed.

What commandeering really means and what we may see happen in consequence in this country may be illustrated by what I found regarding the Canadian-Australian Line, plying from Vancouver to Sydney. They used to have three vessels on this line sailing at three-weekly intervals. One of these vessels was commandeered, but the government authorities left two vessels in the service, that is to say, what they regarded as the minimum required for the transmission of passengers, mails and cargo. When there were three vessels on this service sailing at three-weekly intervals, the ships used to stay in port at each end of the line ten days or two weeks. Now that they have only two vessels, sailing once a month from each end, the ships spend only three or four days in port, unload and load with the greatest rapidity possible—but they carry just about as much freight as was ever carried, although it is hard on the officers who only have about 24 hours in which to interview

*Extracts from an article by B. Olney Hough in the American Exporter.

Factors Affecting Quality and Cost of Production

The value of SKF Ball Bearings for textile mills is in the efficiency developed. This means power savings; economies in equipment, in maintenance, in lubrication and attendance.

Automatically self-aligning ball bearings help to produce steadier running machinery, which allows higher speeds to be maintained and gives increased production. Oil sealed housings prevent the escape of lubricant and insure absolute cleanliness. Many other worth while advantages are described in Bulletin No. 68.

SKF BALL BEARING CO.

HARTFORD 226 CONN.

their wives and children instead of a fortnight's vacation.

It has been asked if there is any relief from present shipping conditions in sight. What I have just written about the more sceintific apportionment of available ships and ship room in principle answers this question. I may further point out the fact that the United States has contracted for over 600 vessels of 3,000,000 tons which are to be built in the course of the next year. It has also "commandeered" nearly 400 vessels with a tonnage of 2,500,000 which are at present on the ways being built in this country for owners of many different nationalities. In other words, there is expected to be available in the course of the next twelve or fourteen months nearly 6,000,000 tons of ships, but this is by no means all, for England is building even more vessels than are we.

Another complication which probably deters some manufacturers from pushing as they should to increase their present export business and laying the foundations for a bigger future business may be the complications introduced by the export license regulations and the Trading with the Enemy Act.

Export license regulations call for study on the part of any exporter or manufacturer. If a manufacturer cannot tell from the published regulations just how they are likely to affect his own products, then he can readily ascertain by writing a letter to the War Trade Board, 1435 K street, N. W., Washington, D. C., or by consulting about the matter with branch offices of that Board, or of the Bureau of Foreign and Domestic Commerce, if the manufacturer is located near any of these offices. Export licenses are not designed to hamper the development of export trade. They are a war measure and one in which every patriotic American ought to concur heartily, submitting readily to the slight annoyance sometimes, but not always, necessitated.

Similarly, with regard to the Trading with the Enemy Act. That American manufacturer who, for the sake of a few paltry dollars feels inclined to continue shipping goods to German houses, in no matter what foreign market, that is to say German concerns who have their parent houses or close affiliations in Germany, deserves the $10,000 fine and the few years in prison which he is likely to get. Please note, however, that every house bearing a German name is not prohibited by the new Trading with the Enemy Act. Many such houses are of Scandinavian, Dutch, Swiss and even French nationality, and many houses of actual German nationality established in South America, for example, have no connections at all with any German houses, hence the mere fact that an individual's or a firm's name seems to be German does not prohibit business relations with them. However, manufacturers will have to study this question, too, and they will have to learn as to the acceptability of houses whom they may suspect, no matter where such houses are located.

As I look at it, business in the United States will continue good right up to the end of the war. It will continue good for a year and very likely two years after the end of the war, because demands will continue to pour into the United States for all sorts of products which the demoralized manufacturers of Europe will not for some time be able to supply and which devastated and ruined sections of Europe will require for themselves in enormous quantities. It will take a long time to repatriate and reorganize in industry great armies of two, three and four million men each. It will take more time to initiate these men once more into the humdrum grind of factory and mill after their two or three or four years in camp and field.

I found this fact being recognized even now in Australia. Soldiers sent home from Europe because of slight disabilities, flat feet or rheumatism, for example, are being pronounced unfit for business or industry in Australia and it is recognized that it will require many months before they can again be made efficient members of the industrial community there. On all of these accounts, I say that it will be one year or two years after the war is over before the United States will begin to feel the real pinch of international competition.

When that time comes, picture to yourself what is likely to happen in this country. Remember the numberless companies here which have built big additions to their works to take care of war business, European or domestic, not alone in ammunition but in all sorts of war supplies from shoe strings to overcoats. I know of a caustic soda plant which built an addition to its works costing a million dollars and employing 5,000 extra hands. I know of one steel plant which built a $3,000,000 addition to its works employing I don't know how many thousand hands. What is going to feed these and hundreds or thousands of other plants which every man who reads these lines knows about, when war times cease? What is going to happen to thousands of employees who are thrown out of work? What is going to happen to hundreds of thousands of other workmen in every branch of industry whose present exorbitant wages will have to be reduced, unless present factory capacities continue to be filled and unless approximately present profits continue to be realized by manufacturers, enabling them to pay today's extravagant wages? I heard today of a factory in this state employing between 500 and 600 girls in khaki bloomers who are receiving between $5 and $6 a day for manual work. This sort of thing cannot continue unless we in the United States continue to pile up an ever increasing volume of export demand for our goods.

If we permit our trade to slack up this country will see the worst panic known in the world's history and we shall have labor troubles culminating in unprecedented strikes and perhaps something worse. It is easy to advance wages. Everyone knows how hard it is to reduce them. Building up an export trade today is a policy of insurance for any manufacturer.

This same line of argument applies to many manufacturers who are not themselves engaged on war work. I suppose that few of them perhaps realize this. The fact that a few manufacturers have been busily engaged on contracts for millions of pairs of boots and shoes for the English, French and American armies may not seem of any account to another shoe manufacturer who has not been so engaged, yet the path has been made easy for him right here at home, competition just so much diminished, because of the engagement of these other manufacturers on outside work. The same thing applies in almost any direction you can look. These conditions will be reversed as soon as the war is finished. We shall then see stiffer competition than has ever been known in domestic trade, and sooner or later in international trade. No man can wait to prepare for these other conditions until they arrive, unless he wants to dig a grave for his own business.

More than all this, manufacturers are going to need every cent's worth of export trade which they can possibly

Liquid Chlorine

The Season's Greetings

Our Sincerest and Best Wishes
For a Happy and Prosperous New Year

This page could not attempt to hold the good wishes we have for our friends among the textile mills, for it is only through their appreciation of the distinct advantages of "Liquid Chlorine" over any other bleaching method, that we have enjoyed the prosperity we have during the past two years, and we take this opportunity to express our deep appreciation for their valued friendship and patronage.

During the coming year our hope and belief is that our old friends will continue to be our friends, and that we have the opportunity of making and serving many new friends and customers.

"Liquid Chlorine" has attained to be the standard bleaching process—has proven that it is the most efficient and scientific 100% bleaching agent.

May we serve YOU during 1918?

Electro Bleaching Gas Company

General Offices

18 East 41st Street New York City.

get in order to pay their taxes which are certain to grow heavier and heavier as the months go by. The United States itself needs a bigger and bigger "favorable balance of trade," that is, excess of exports over imports; needs it for national prosperity, and must have the nations of the world more and more indebted to it to maintain its recently born financial supremacy. The increasing of export trade is both a personal advantage and a patriotic duty. There is going to be an enormous volume of this trade coming our way now and for some time after the war. It will not continue thereafter to come our way unless we have properly introduced ourselves to it and cultivated it.

You and I know that new connections are not to be developed in foreign countries in a week or a month. We know how much preparation and really serious export effort has to be made, how much good connections in foreign markets have to be cultivated and worked up gradually and patiently from small beginnings. Cannot any intelligent manufacturer realize that he cannot wait until he needs the business, that with the return to aggressive competition of British, French, German and other European manufacturers the American who waits will be lost? His only hope and his salvation lie in beginning the effort now and continuing it patiently, persistently and above all intelligently.

From every point of view, in his own self-defense, the American manufacturer must double his export trade. In self-defense, too, he has got to work and study to find means not only of getting export trade but of handling it. The difficulties are not insuperable. There are delays, there is red tape and undoubtedly irritation, but the thing can be done and is being done every day.

Trading With Latin-America.

Among recent books on the subject of foreign trade there is one issued by the Irving National Bank entitled "Trading with Latin-America" which constitutes an interesting departure from the customary treatment of that subject. It treats our always interesting trade relations with Latin-America in a live, business-like way which should appeal strongly to the business man. In outline it is broad and comprehensive, giving a detailed description of the commercial conditions now prevailing in the several republics of Central and South America, and suggestions regarding the utilization of these conditions to the mutual advantage of all exporters interested in entering this new foreign field and of the Latin-American peoples themselves as well.

There is a series of helpful suggestions on methods of approach—a particularly interesting subject in view of the general tendency of the average North American business man to overlook the differences between the personal characteristics, environment, language, education, and general point of view of the Latin-American and those of the ordinary, every-day business man of our world. It makes the question one of adaptation. The book states:

"Sales plans and methods must be adapted to conditions. These differ in various countries and localities. Unless the manufacturer is willing to conform, it is best not to make an attempt to win the trade. A most dangerous policy is to take a 'flyer' in foreign business."

The handbook shows what the methods of meeting and doing business with these people should be, and in a variety of ways makes easier the commercial contact which our commercial representatives find so difficult. The South Americans are anxious and ready to carry on commercial transactions with us at any and all times. Because of our greater experience in the field of business and our greater knowledge of trade conditions, it is for us to take the initiative and develop a strongly united commercial spirit among the new races with whom we are seeking to affiliate ourselves.

Financial conditions are discussed in their relation to the carrying on of successful trade negotiations, and various well-defined ways and means of financing these commercial transactions are submitted for the reader's consideration.

The chapters on Export Commission Houses and Export Merchants, Export Department Organization, Export and Foreign Trade Journals, and Suggestions for an Export Library, will be found of particular interest to the exporter for whom this work has been compiled.

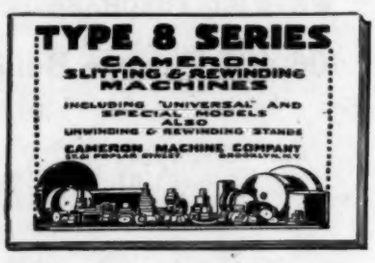
Statistics regarding Latin-America, its climate, population, currency situation, buildings, and market-places—the latter an interesting phase of the life of these people in revealing their local manner of buying and selling their wares—are given in detail.

The necessity for preparing catalogues to show the Latin-American purchaser the kind of merchandise to be submitted for his inspection, is emphasized in this book which shows in detail the kind of results that can be obtained by compiling a high grade catalogue and accompanying it with a personally written letter in which the merits of the particular article to be sold are brought to the prospective customers' attention.

The book on the whole presents to the exporter a complete and concise handbook of valuable and well-arranged information upon the entire Latin-American situation, and a copy of it will be forwarded by the Irving National Bank to those interested upon written request.

Of Timely Interest.

At the present time when such immense quantities of cotton goods are being prepared for Red Cross and hospital purposes abroad, the new publication by the Cameron Machine Company, 57-61 Popular Street, Brooklyn, New York, describing their new universal types Nos. 8 and 11 slitting and rewinding machines will prove of especial interest.



This book has just been issued and is now ready for distribution. It not only contains much of instructive interest to the reader, but it also illustrates some types of a machine that will prove of great value in many lines of textile work. A copy of this publication may be secured upon application.

The smoother a man is the more liable he is to slip up occasionally.

Joseph B. Miller

DYES AND CHEMICALS

Dealer in all Heavy Chemicals

We sell and buy on contracts or open orders.

We Make a Specialty of Matching Colors

Send us samples of the Colors you wish matched, and we will match them and supply the Dyestuffs at *reasonable prices.*

Soda Ash	Direct Black
Dense Ash	Direct Blue
Caustic Soda	Direct Green
Nitrate Soda	Direct Yellow
Bi-Chromates	Direct Red
Chloride Lime	Direct Brown
Prussiate Soda	Victoria Blue
Aqua Ammonia	Methylene Blue
Sodium Sulphide	Acid Green
Chlorate Soda	Acid Yellow
Paris Green	Acid Navy
Prussiate Potash	Sulphur Colors

Our numerous contracts with consumers to take their surplus stocks of the above materials, enable us to offer same at exceptionally low prices, and in many instances less than market quotations, particularly in Dyestuffs.

WE WILL PURCHASE YOUR SURPLUS STOCKS IN ANY QUANTITY

406-407 Finance Building **Philadelphia, Pa.**

PHONES

Bell Spruce 5506
Spruce 5507

Keystone Main 373
Long Distance 448

Cable Address "JOBE"

CODES { A B C 5th Edition
Western Union

One of the Largest Dealers and Exporters of Dyes and Chemicals in America

Convention Notes.

(Continued from page 190.)

Superintendent Forrest B. Gardner of the LaGrange plant of the International Cotton Mills was a visitor at the Show, as were several of his department heads.

General Superintendent John A. Porter of the Bibb Manufacturing Co., Macon, Ga., was another Georgia mill man who spent several days in Greenville.

Thomas & Thomas, the group insurance experts, who had an exhibit in the balcony, were distributing very neat adjustable pocket pencils among their customers and friends.

D. C. Dunn and D. L. Mackey of the Stafford Company were shaking hands with their numerous friends at the Show. To quote Mr. Dunn, "Have you seen Jimmy?"

G. B. Scarlett, General Manager of the Fibre Specialty Company, Kennett Square, Pa., personally attended the Show for several days.

L. E. Ogden, Sales Manager of the Oxweld-Acetylene Company, took personal charge of their extensive exhibit.

Leon B. Rogers and James L. Nieukirk of the Leatheroid Sales Company, 1024 Filbert Street, Philadelphia, were renewing the acquaintances which they made at the first Greenville Show in 1915. Incidently, "Sunny Jim" was distributing yard sticks bearing advertising matter in reference to the company.

J. M. Broom, well known among the mill men of the South, was representing the Greenville Iron Works at their exhibit.

H. B. Smith, President of the Surpass Chemical Co., Albany, N. Y., was in personal attendance at the exhibit of this company which was showing samples of goods finished by the autogyp process of dyeing and bleaching in one operation . He was distributing a practical article reprinted from COTTON describing this process.

Paul Haddock, Southern Representative of A. Klipstein & Company with headquarters at Charlotte, N. C., was in charge of the A. Klipstein exhibit. He was assisted by C. A. Sweet and W. R. Smith.

J. Kirk Rowell, Southern Representative of the American Kron Scale Company, with offices at Louisville, Ky., wore a placid smile of contentment. He said business was good.

H. M. Bonney, Manager of the Atlanta Branch of the Graton & Knight Manufacturing Co., Worcester, Mass., was a visitor at the Show where his company had an exhibit.

J. T. Stone had charge of the exhibit of the Walter E. Lummus Company and was distributing some very interesting illustrated matter among the mill men calling at his space.

G. C. Urquhart and M. A. Sheehan were representing the Franklin Process Company of Providence, R. I., at their exhibit. They are both well known in the finishing field.

J. R. Ramsay, Southern Manager of the Monroe Calculating Machine Company, was another officer in the Red Cross contingent. These Red Cross boys certainly were popular.

E. C. Reeves, Southern Representative of the Cyclone Fence Company, Waukegan, Ill., was in charge of the interesting exhibit of this company which was located on the balcony.

The booth of the Keever Starch Company, on the second floor, presided over by Capt. James H. Maxwell and Charlie Kurtz, was the headquarters for a group of pretty girls—as usual.

W. F. Kimball, President and Joseph A. Bennis, Vice President and Sales Manager of the New York and New Jersey Lubricant Company, 165 Broadway, New York, were devoting their personal attention to the visiting mill men. In this they were ably assisted by Southern Agent Lewis W. Thomason and others.

Dr. Alfred Pfister, Secretary and Chief Chemist of Jacques Wolf & Company, Passaic, N. J., was greeting many friends at the Show.

H. Callaway Mimms, John E. Humphries and C. L. Ashley were three Dary Ring Traveler representatives attending the exhibit.

R. W. Worthington, Superintendent of the Special Products Department of the William C. Robinson & Sons Company of Baltimore, Md., was in charge of their exhibit at Greenville.

Dr. J. C. Haas, Manager of the Textile Department of E. Sonneborn Sons, Inc., of New York, was in charge of their textile exhibit at the show.

President George Bird of the Bird-Wilcox Company, Inc., Atlanta, Ga., was greeting his many friends who called at his exhibit on the mezzanine floor.

Superintendent O. E. Nutter of the Newton Upper Falls shop of the Saco-Lowell Shops, was in attendance at the Greenville Exposition. He was accompanied by Mrs. Nutter who was very much interested in the new experiences she was receiving on her Southern trip.

Fred W. Forster, Southern Agent for the Draper Corporation with offices in Atlanta, Ga., was in charge of the interesting mechanical exhibit of this company.

A. R. Heritage of the Hussong Dyeing Machine Company of Groveville, N. J., was in attendance throughout the week.

Frank B. Comins, Vice President and Treasurer of the American Moistening Company, Boston, Mass., and J. F. Porter and F. G. Bell, Jr., from the Atlanta office were all present at the exhibit of this company.

D. W. Haskell from the New York office of the Anchor Post Iron Works acted as assistant to Southern Representative George W. Forster, who had charge of the exhibit. Mr. Forster makes headquarters in Atlanta at 916 Empire Building.

Dr. W. R. Cathcart, Technical Director of the Corn Products Refining Company of New York, personally attended the exhibit of this company throughout the week. The exhibit was in charge of John R. White, Manager of the Southern office at Greenville.

George W. Langford, President and General Manager of the Economy Baler Company, Ann Arbor, Mich., was in attendance at the exhibit of this company the larger part of the week. The exhibit was in charge of J. S. Hulme, the Southern Representative with offices in the Empire Building, Atlanta, Ga.

C. C. Shoen, of the Atlanta office of the Western Electric Company of New York, was demonstrating some interesting lighting appliances made by this company. Ralph Bouligny, Manager of the Charlotte office, was also in attendance.

As predicted in the November Pre-Exposition Number of COTTON, Fred L. Peech and Geo. C. Turner, of Peech Sons & Philips Co., Camden, N. J., were both in attendance

at the Show. The weather wasn't as nice as it was in 1915, but Geo. Turner's smile would thaw anything.

W. B. McBurney of Atlanta, the well known Manufacturers' Agent, was present in the interest of the companies he represents. These include the Canton (Ohio) Grate Company, shaking grates; Perolin Company of America, a boiler metal treatment; The Bayer Steam Soot Blower Company; and the Northern Equipment Company, which manufactures the Copes feed water regulators.

Allan Little, Vice-President and Superintendent of the Kincaid Mills, Griffin, Ga., was noted during part of the exhibition.

Stephen D. Bennett, Superintendent of Efird Mfg. Co., Albemarle, N. C., one of the Cannon mills, was another man to make the trip from Albemarle to Greenville by automobile.

M. G. Stone, General Superintendent of the Pacolet Manufacturing Co., with residence at Spartanburg, S. C., was one of the former presidents of the association in attendance. He expressed himself as greatly pleased with the show.

W. P. Hamrick, General Superintendent of the Hampton Division of the Pacific Mills, at Columbia, S. C., was another former president in attendance. A large number of his department heads were also reported present.

Miss Minnie G. Crawford, the Official Stenographer for the Southern Textile Association, was unable to be present. This was a matter of keen regret to her many friends who, twice a year, receive her smiling greeting with pleasure.

W. M. Sherard, General Superintendent of the Henrietta Mills, and the Caroleen Mills, both of North Carolina, and also past president of the Southern Textile Association, arrived in Greenville, Thursday afternoon. However, important business called him away on Friday.

W. G. Nichols, General Manager of the Griffin (Ga.) Manufacturing Co., was another mill man who brought all of his overseers with him.

The Regimental Band of the 118th Infantry, formerly the First South Carolina Infantry, gave two concerts daily at the Show during the entire week. Near the close of the Exposition the exhibitors all contributed equally toward the purchase of a trophy to be presented to this band as an evidence of their appreciation for the splendid music rendered daily throughout the exhibit.

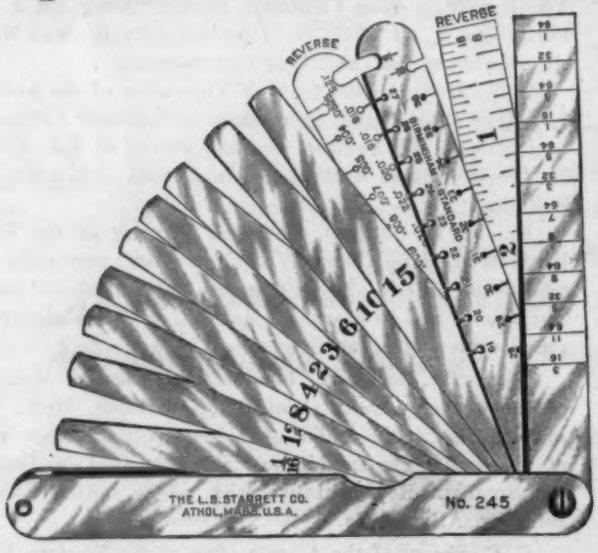
W. Irving Bullard and Eugene Coughlin of the Textile Department of the Merchants National Bank of Boston were visitors from New England during the week.

As was the case at the previous exhibit in 1915, Thomas R. Riley of the Exposition Company was in active charge of many of the details.

While this list of personal notes might be continued for several more pages, lack of space at this time prevents such a continuance. However, in closing COTTON wishes to congratulate W. W. Carter, of the Fisk-Carter Construction Company and the several representatievs of the offices of J. E. Sirrine and Huntington & Guerry for the almost superhuman efforts which they exerted in order to bring the building to the point of completion where it could be comfortably occupied as an exhibition hall on the dates set by the Executive Committee. These men deserve the highest commendation not only on the part of the exhibitors, but by the whole South whose progress they have aided by their untiring efforts.

Special Cotton Mill Gauge Free—

for a few minutes of your time.



The taper gauge shows the thickness in 64ths to 1/16ths of an inch on one side, and on the reverse side is graduated as a rule three inches of its length, reading in 8ths and 16ths of an inch.

The wire gauge, English Standard, shows on one side sizes numbered from 19 to 36, with two extra slots, one 1/16, the other 1/8 on an inch, and on the other side shows the decimal equivalents expressed in thousandths. This gage has also 9 thickness or feeler gage leaves, approximately 4 inches long, of the following thicknesses: .002, .003, .004, .006, 008, 010, .012, .015 and 1/16th of an inch all folded within the case, which is 4¾ inches long, convenient to handle or to carry in the pocket.

Our Service Department desires the opinions of active mill men on the quality of the work shown in the advertising pages of this issue of COTTON.

We are, therefore, going to give this gauge for the best letter by a mill executive who gives the clearest and most definite reasons why, and in what maner, any certain advertisement is, in his opinion, the best.

Contestants must be mill executives, from overseers to presidents, connected with spinning, weaving, knitting, or finishing plants. The letter must be accompanied by the name, address and official position of the writer in order to be eligible, and must reach this office not later than the first of the month succeeding the date of issue.

The judges will be the Editor of COTTON and the Manager of the Service Department, whose decision will be final. The name of winning contestant will be announced in COTTON'S pages.

Address Contest Department of COTTON, Atlanta, Georgia.

KNITTING SECTION

TO MEET COMPETITION

You must be equipped with the

Most Modern Machinery and Most Economical Methods

Can you *afford* to transfer half hose tops by *hand* in the *day-time only* when by using our

MODEL K-G MACHINE

this *Expensive Labor* may be *saved* and the machines run *24 hours*, thus more than

Doubling Production

ESTABLISHED 1865

Scott & Williams

INCORPORATED

366 Broadway, NEW YORK

ABERFOYLE MANUFACTURING COMPANY

DYERS, BLEACHERS, GASSERS

DYERS OF COLORS FAST TO SUN AND BLEACHING

MERCERIZED YARNS

Our Yarns are the Products of American Mills

MAIN OFFICE

CHESTER, PA.

402 MORRIS BUILDING
PHILADELPHIA

746 INSURANCE EXCHANGE
CHICAGO

Knit Goods Men Meet at Chicago

War topics were given first place in the discussions at the third annual meeting of Central Western knitgoods manufacturers, held under the auspices of the National Association of Hosiery and Underwear Manufacturers at the Hotel LaSalle, Chicago, on December 7th.

There was a large attendance of manufacturers from all over the territory, as well as a number from the East and South, and the discussions were generally participated in. There were no formal papers, but all of the discussions were informal, giving them a point and flavor that they could not have had otherwise.

The subject of eliminating boxes in packing knitgoods, as a war measure intended to save shipping space; co-operation with the Government through the appointment of War Service Committees, representing all branches of the trade, to act with the committees of the Council of National Defense, and discussion of attempts to solve the labor situation by the use of workers in the homes were among the more important subjects taken up.

The meeting was presided over by President P. C. Withers, of the Illinois Knitting Works, Mt. Vernon, Ill. He called attention at the beginning of the session to the fact that the discussions would deal with how knitgoods manufacturers might conduct themselves so as to assist the country during the period of the war. In this connection he referred to criticisms which had been heard regarding the service of representatives of the industry on the knitgoods committee of the Council of National Defense, in view of their participation in the sale of goods to the Government.

"The men who compose this committee, such as Lincoln Cromwell, Rufus Scott and others," Mr. Withers declared, "are doing their best to serve the Government, and are giving freely of their time and effort. It would be impossible to obtain the kind of service needed without going to those who are actively engaged in manufacturing. If they are actively engaged, they have goods for sale, and I see no reason for questioning their participation in business of this kind. I have received information that Mr. Cromwell is to remain at the head of this committee."

Mr. Withers also referred to the fact that some knitters have been putting loopers into homes, and suggested that while this might be a good thing in taking care of a present emergency, it might lead to a bad thing in the future. Tenement manufacture, he said, should not be encouraged as a substitute for working in a healthful factory, observing all of the labor laws. There might also be complications growing out of the necessity of complying with these in connection with the operation of machinery in the homes of employees.

He also referred to the importance of discussions on the subject of revising packing regulations in order to economize shipping space, this proposition having been brought up at the request of the Commercial Economy Board of the Council of National Defense.

W. B. Tyrrell, of the Bradley Knitting Company, Delavan, Wis., talked to the manufacturers on the subject of "more sheep, more wool," which has been given prominence through the efforts of several organizations devoted to the encouragement of the sheep industry. Mr. Tyrrell has recently been elected president of the National Sheep and Wool Bureau, of Chicago, which is working along this line, and he explained fully the objects of the organization and the Philadelphia Wool and Textile Association, which is co-operating with it by handling all of the territory east of the Ohio river.

"The necessity for an increased production of wool has been brought closely to the attention of all by the present conditions," he said. "The United States uses 650,000,000 pounds a year, and produces only 250,000,000 pounds. The shortage has been made acute by the war, but it has existed for some time. A recent Government report of wool on hand showed that more than half of it was of foreign origin, and demonstrated clearly that we are not self-supporting in the matter of wool.

"The dye shortage demonstrated what can be done along this line, and while in the nature of things it will be impossible to bring about so rapid an improvement as to wool, Government authorities believe that with proper methods the wool industry may be brought back to a satisfactory condition in five years, and certainly can be restored in ten."

Mr. Tyrrell then examined the causes of the decrease in the sheep production and wool supply, saying that using the wool tariff as a football was one reason, while loose dogs, the cutting up of vast grazing lands in the West into homesteads, etc., have had their effect. The Government, he explained, had been active for years in promoting the hog and cattle industries, but only in the past two or three years had it taken any interest in increasing the sheep supply, and at present only $40,000 is available for extension work. Mr. Tyrrell indicated the work which the wool organizations are doing, explaining that already arrangements are being made to use a large acreage of cut-over timberlands in the Northern states for sheep raising purposes. The bureaus are also acting as a clearing house for sheep inquiries, and are arranging to have committees at the principal stockyards select sheep which are best suited for breeding purposes for farmers who inquire for them. Boys' and girls' sheep clubs are being established and at present 1000 or 1500 such clubs are operating.

Mr. Tyrrell closed with an appeal to the members of the organization to help the National Sheep and Wool Bureau, which plans to spend $50,000 a year in its promotion work.

Following this talk President Withers appointed the following Resolutions Committee: J. Ogden Wells, Cooper, Wells & Co., St. Joseph, Mich., chairman; W. B. Tyrrell, Bradley Knitting Company, Delavan, Wis.; Thomas S. Tuley, Louisville Cotton Mills Co., Louisville, Ky.; Joseph Zens, Milwaukee Hosiery Company, Milwaukee, Wis.; E. A. Clements, Globe Knitting Works, Grand Rapids, Mich.; Henry Pope, Paramount Knitting Company, Chicago, and D. L. Galbraith, World Star Knitting Company, Bay City, Mich.

Correspondence was then read by Secretary C. B. Carter with the War Economy Board on the subject of economy in shipping space, and the question was brought up for

ALWAYS FIRST WITH THE LATEST

BANNER

ALWAYS FIRST WITH THE LATEST

FULL AUTOMATIC

HOSIERY MACHINES

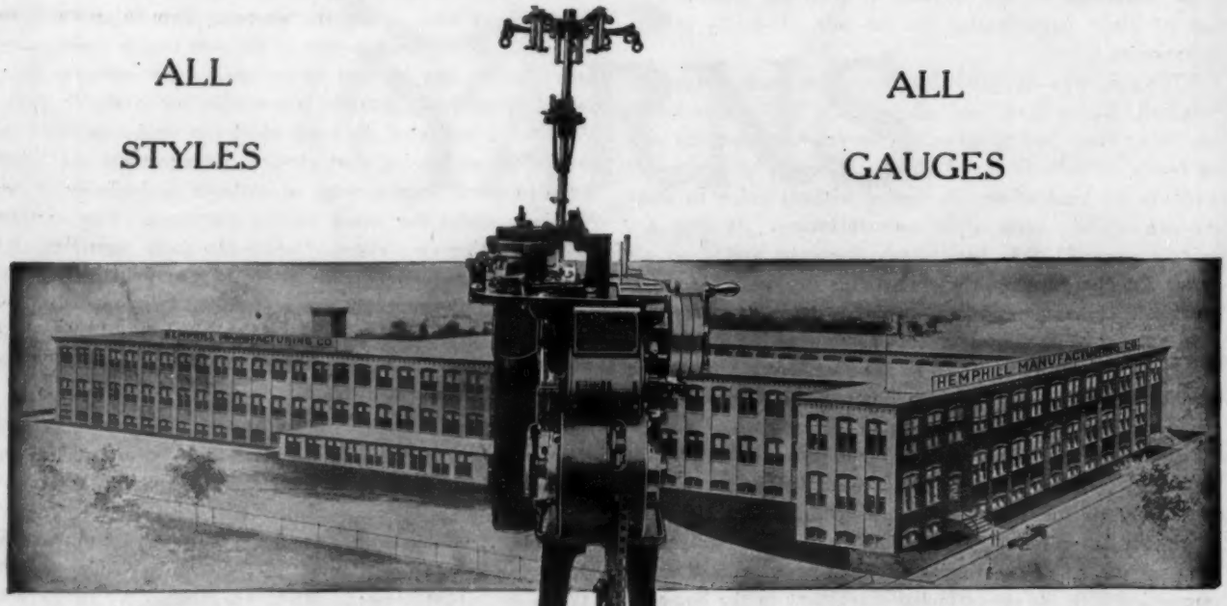
More than 32,000 In Successful Operation

SIMPLICITY — SPEED — PRODUCTION

ALL PARTS ACCESSIBLE FROM FRONT OF MACHINE

ALL STYLES

ALL GAUGES



Over 100 Machines Completed Weekly for Home and Export Markets.

Write for full particulars and samples of work.

HEMPHILL MFG. CO.,

PAWTUCKET, RHODE ISLAND

ROOM 601, LEONARD BLDG., 350 BROADWAY, NEW YORK.

discussion as to whether knitgoods manufacturers could not well dispense with the use of strawboard boxes in packing their hosiery and underwear.

President Withers said that packing in such a container makes a bulky package, and suggested that the goods could be wrapped in a good waterproof paper and labeled. They would be easier to put up, he contended, though manufacturers advertising trade-marks might be interfered with to some extent.

Mr. Zens said that at a recent conference with Government officials in Milwaukee it had been indicated that the heavier kinds of paper, such as the strawboard used for boxes, would probably be put on the non-essential list, on account of the excessive coal consumption required in drying this product. He thought it would be advisable to anticipate action by the Government by changing the methods of packing.

It was brought out in the discussion that this was a subject which concerned the jobbers and dealers, and that it would be well, before taking final action, to get in touch with those interests, and see whether the change would meet with their approval.

H. L. Remington, of Philadelphia, who recently returned from England, reported that hosiery is being put up there in dozens, with bands around them, and that boxes do not seem to be used.

G. H. Curtis, of the Black Cat Textiles Company, of Kenosha, Wis., said that his company had furnished the Government goods put up without boxes, and that this method of packing is used in connection with export business, but he did not believe silk products could be handled without boxes. Care is needed in wrapping up and tying.

Mr. Clements said that Montgomery, Ward & Co. and other large mail-order houses have been using individual envelopes for wrapping underwear, instead of boxes, and that the plan has been found to be satisfactory.

Mr. Wells explained that woolen hosiery had always been put up in bundles, but that there would probably be waste in handling cotton goods that way, on account of their becoming dirty. Boxes are needed for the protection of the goods. Further, they are an advantage in enabling sizes to be properly assorted.

With reference to the possible saving of space by eliminating boxes, Mr. Tyrrell said that he had experimented with boys' sweater coats, and that by using one box for six coats, instead of one for each, 30 per cent of the space formerly required was saved.

It was the impression of many that the merchants would have to provide themselves with permanent boxes of some kind in order to enable paper boxes to be done away with. It was stated that it costs 1½ cents a dozen more to pack in envelopes than in boxes, but that if all of the goods were packed this way, the saving in the purchase of envelopes in quantity would make a difference.

H. G. Herget, representing the National Foreign Trade Council, made a talk on the subject of the possibilities of export trade. In introducing a discussion of the work of the organization, Mr. Herget read a memorandum of C. L. Chandler, South American agent of the Southern Railway and other Southern lines, who is located at Chattanooga, Tenn. Mr. Chandler gave some interesting suggestions regarding the development of knitgoods business in South America. He urged that more direct representation be secured; that the representative speak the language of the country, and that sales be confined to one house in a city on trade-marked goods.

He said that complaints had been heard of American hosiery shipped into South America, due to the dumping of patched and darned goods. There were also complaints of faulty packing, and in this connection he recommended the use of oiled paper. Don't confine offerings to the principal cities, as there are many important interior communities which should be developed. Proper marking, in compliance with the customs regulations, is another important matter.

After reading these suggestions, Mr. Herget made some general remarks on the subject of the importance of foreign trade and especially the importance of the passage of the Webb bill, which would permit American manufacturers to combine in foreign selling. He said that our manufacturers are greatly handicapped owing to their limitations along this line.

Secretary Carter, referring to references of Mr. Chandler to the shipment of inferior merchandise to South America, read an article published in the Daily Consular Reports, quoting the Pennsylvania division of the American Association of Hosiery and Underwear Manufacturers as condemning the practice of a few manufacturers of foisting unworthy merchandise on foreign buyers. He said that action had been taken by the association which would result in the expulsion of any member who was found to have knowingly made such a shipment.

Reference was made to a call for a meeting in Washington December 12 of the chairman of war service committees of the various trades. The meeting was to be held under the auspices of the United States Chamber of Commerce, which sought representation of the knitgoods industry.

Before closing the morning session president Withers stepped from the chair for the purpose of delivering a rattling and inspiring talk on more aggressive Americanism. He said that he is one of the four-minute men, and that in this work he has had occasion to note the indifference of many citizens. Everyone who has the interests of America at heart, he declared, should be more active and should insist on the recognition of American principles by others. The appeal was met with hearty applause.

Between the morning and afternoon sessions there was an enjoyable luncheon, served at round tables, in the ballroom of the LaSalle.

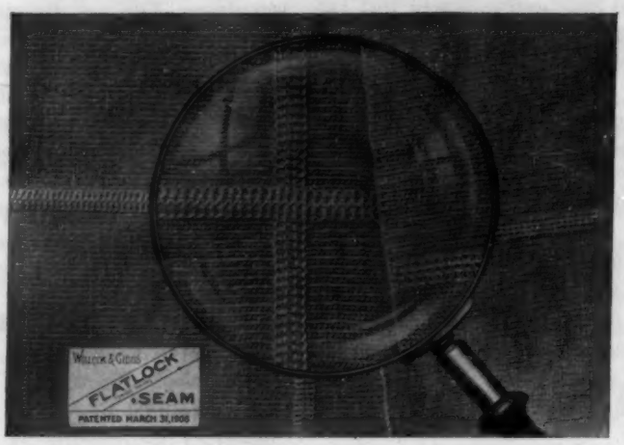
At the opening of the afternoon session it was announced that arrangements were to be made to give the sweater manufacturing interests more extended attention, and that a meeting of sweater men would be held after the general meeting to indicate the lines along which they desired the association to work with reference to their trade.

The subject of sending loopers into homes was then taken up. Mr. Galbraith said that his company at present has six loopers being used in this way, and that the first week the machines were out the company recorded a production of 200 dozen pairs of hosiery from a looper operator who had married and desired to continue work at home. There is little difficulty on account of wiring, as the loopers are bought with the motors installed, and most of the homes in Bay City are equipped with electric wiring.

FLATLOCK

REG. U. S. PAT. OFF.

The Seam That Sells the Garment



THE elimination of some operations hitherto found necessary in the manufacture of knit underwear means lower operating cost and quicker production, and for this reason many prominent knit underwear manufacturers have adopted the *Flatlock* Machine for seaming.

The Flatlock Machine makes the strongest, most durable, most sightly seam that can be used to seam knit underwear. The Flatlock Seam comes from the machine *complete*, saving the cost and delay of the additional covering operation heretofore deemed necessary.

Can *you* afford to neglect the operating economy which Flatlock equipment offers you, and the sales promoting value of the Flatlock Seam in selling your goods?

Last March the United States Government issued specifications for underwear as follows:

"All seams to be flat and double seamed except where FLATLOCK seam is used . . . . "All stitching to be secure and strong, and not to ravel or pull out." (Specifications 55U1A)

The FLATLOCK Seam is absolutely flat---a perfect union of abutted cut edges.

Any number of stitches in the Flatlock seam may be cut, but the seam itself *will not rip nor ravel when pulled in either direction.*

Write us for list of nearly 100 underwear mills already using Flatlock Machines.

Trade Mark

Reg. U. S. Pat. Off.

Willcox & Gibbs Sewing Machine Company

HOME OFFICE: 658 BROADWAY, Corner Bond Street
NEW YORK

Willcox & Gibbs S. M. Co., Ltd., London, Paris, Milan
Canadian Representative: W. J. Westaway, 5 Sun Life Bldg., Hamilton, Ont.

Mr. Wells, chairman of the committee on resolutions, then read the four resolutions drawn up by the committee. These were unanimously adopted. They are as follows:

In conformity with the wishes of our Government expressed through the Council of National Defense to formulate war service committees from each industry, therefore

Be it resolved, That Committees be appointed representing the hosiery, underwear and sweater division of the Knitting industry, to act in an advisory capacity, or otherwise to supply our country's requirements.

The committees appointed are as follows:

Sweater War Service Committee.

William H. Wye, Wm. H. Wye & Co., Needham, Mass.
A. W. Spalding, A. G. Spalding & Bros., Brooklyn, N. Y.
Isaac Roff, Roff Underwear Co., Cohoes, N. Y.
Clarence Hays, Federal Knitting Co., Cleveland, O.
H. Friedman, Friedman-Blau-Farber Co., Cleveland, O.
H. T. Ballard, Ballard Knitting Co., Norristown, Pa.
Frederick Mayer, Pennsylvania Knitting Mills, Philadelphia, Pa.
G. H. Packard, Appleton Superior Ktg. Works, Appleton, Wis.
W. B. Tyrell, Bradley Knitting Co., Dolavan, Wis.
Otto A. Finck, Imperial Knitting Co., Milwaukee, Wis.

Underwear War Service Committee.

Hewitt Coburn, Jr., Glastonbury Ktg. Co., Hartford, Conn.
A. C. Dunhan, Dunhan Hosiery Co., New Haven, Conn.
L. W. Tiffany, New England Ktg. Co., Winsted, Conn.
O. C. Stephenson, Stephenson Underwear Mills, S. Bend, Ind.
J. C. Roulette, R. A. Ktg. Mills, Hagerstown, Md.
C. P. Baker, Lawrence Mfg. Co., Lowell, Mass.
Chas. L. Macomber, Taunton Ktg. Co., Taunton, Mass.
C. F. Winship, Winship, Boit & Co., Wakefield, Mass.
D. L. Galbraith, World's Star Knitting Co., Bay City, Mich.
E. A. Clements, Globe Khg. Works, Grand Rapids, Mich.
Myron H. Powell, Amazon Ktg. Co., Muskegon, Mich.
F. M. Stowell, Northwestern Ktg. Co., Minneapolis, Minn.
Nathan Hatch, Fuld & Hatch Ktg. Co., Albany, N. Y.
John K. Stewart, John K. Stewart & Sons, Amsterdam, N. Y.
Marshall Ely, Lastlong Underwear Co., Oswego, N. Y.
F. B. Harder, High Rock Ktg. Co., Philmont, N. Y.
S. Wright, Jr., Wright's Health Underwear, Troy, N. Y.
Rodney W. Jones, Augusta Ktg. Co., Utica, N. Y.
F. W. Kavanaugh, Kavanaugh Ktg. Co., Waterford, N. Y.
W. C. Ruffin, Mayo Mills, Mayodan, N. C.
P. H. Hanes, Jr., P. H. Hanes Ktg. Co., Winston-Salem, N. C.
J. L. Black, Superior Underwear Co., Piqua, O.
Joseph Feldenheimer, Roxford Ktg. Co., Philadelphia, Pa.
Benj. Gibbs, Cheltenham Ktg. Co., Philadelphia, Pa.
Thos. F. Barry, Hygienic Fleeced Und. Co., Philadelphia, Pa.
Ray W. Lotspeich, Appalachian Mills, Knoxville, Tenn.
H. S. Cooper, Cooper Underwear Co., Kenosha, Wis.

Hosiery War Service Committee.

W. B. Davis, W. B. Davis & Sons, Ft. Payne, Ala.
E. B. Gaylord, Winsted Hosiery Co., Winsted, Conn.
C. L. Perkins, Perkins Hosiery Mills, Columbus, Ga.
P. C. Withers, Illinois Knitting Co., Mt. Vernon, Ill.
W. H. Ziock, Rockford Mitten & Hosiery Co., Rockford, Ill.
T. F. Theime, Wayne Knitting Mills, Ft. Wayne, Ind.
H. T. Rollins, Des Moines Hosiery Mills, Des Moines, Iowa.
W. H. McLellan, Alden Mills, New Orleans, La.
J. L. Johnson, Union Mfg. Co., Frederick, Md.
J. O. Wells, Cooper, Wells & Co., St. Joseph, Mich.
F. A. Patrick, Patrick-Duluth Ktg. Factory, Duluth, Minn.
A. W. Sulloway, Sulloway Mills, Franklin, N. H.
C. W. Kilbourn, Interwoven Mills, New Brunswick, N. J.
F. L. Chipman, Chas. Chipman's Sons, New York City.
Charles W. Adler, Adler Underwear & Hosiery Co., Cincinnati, O.
Jos. S. Rambo, Rambo & Regar, Norristown, Pa.
Edward Powell, Powell Ktg. Co., Philadelphia, Pa.
Robert C. Blood, John Blood & Co., Philadelphia, Pa.
Charles E. Leippe, Reading Ktg. Mills, Reading, Pa.
Shepard Nicholson, Excelsior Ktg. Mills, Union, S. C.
Garnett Andrews, Richmond Hosiery Mills, Chattanooga, Tenn.
C. A. Plumley, Vermont Hosiery & Machinery Co., Northfield, Vt.
L. B. Conway, Danville Ktg. Mills, Danville, Va.
R. N. Kimball, Black Cat Textile Co., Kenosha, Wis.
L. Heilbronner, Holeproof Hosiery Co., Milwaukee, Wis.
W. Park Moore, Hancock Knitting Mills, Philadelphia, Pa.
Gustav Oberlander, Berkshire Knitting Mills, Reading, Pa.
George D. Horst, Nolde Horst Co., Reading, Pa.

Realizing that America raises only about one-third the wool required for her own consumption, and that definite promotional work is necessary to arouse the farmers of the United States to the necessity of raising more sheep and wool,

Be it resolved: That, the Knitters of the Central West Branch of the National Association of Hosiery and Underwear Manufacturers in convention assembled, do hereby endorse the work of the National Sheep and Wool Bureau of America and recommend the Bureau for the hearty financial and moral support of all textile manufacturers.

Whereas, our country is now embroiled in the most serious war in history of the world and the resources of the country are being heavily taxed, it behooves every manufacturer and individual to solemnly pledge his every endeavor to aid and assist his government not by being commandeered, but through willing volunteering:

Be it resolved: That the Central Western members of the National Association of Hosiery and Underwear Manufacturers Association hereby unselfishly pledge to the Federal Government and the Government of the States where they may be located, their undivided co-operation and support in any measures adopted towards the successful conclusion of the war.

Whereas the Economy Board of the Council of National Defense has requested the cooperation of the Hosiery Underwear and Knit Goods manufacturers to help conserve the transportation facilities of the country by changing the present method of packing hosiery, underwear and knit goods in paper boxes. By substituting some other type of packing which will result in a material reduction in volume of shipments.

Therefore, be it resolved by the Central Western members of the National Association of Hosiery and Underwear manufacturers in Convention assembled, that a committee of three be appointed to investigate the question and confer with any and all similar committees appointed or which may be appointed by National or Sectional Associations interested in the manufacture, jobbing or retailing of knit goods.

Reports of said committee to be published in the Knit Goods Bulletin from time to time as formerly and a complete and final report to be submitted at the annual convention of the National Association of Hosiery and Underwear manufacturers to be held in Philadelphia next May.

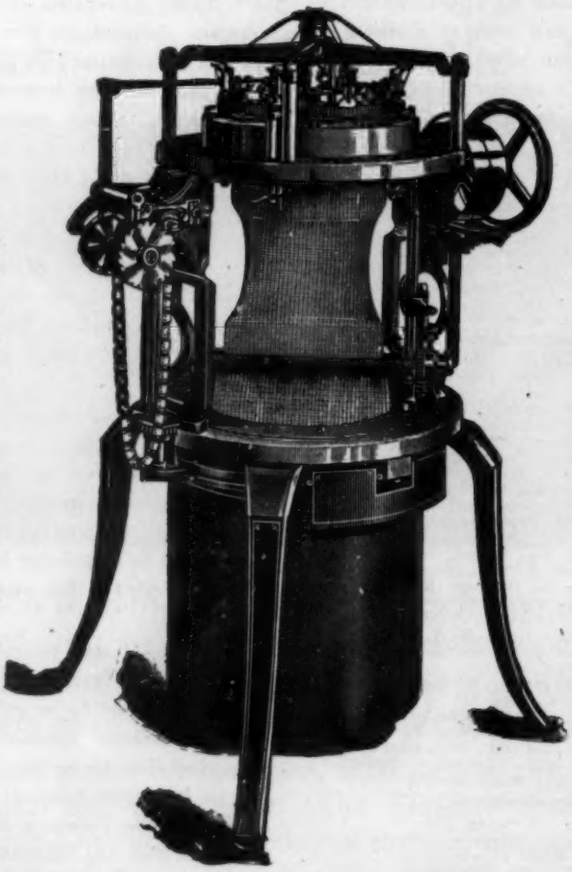
Be it further resolved that copies of this resolution be mailed to the Economy Board of the Council of National Defense and all National and Sectional Associations interested.

In connection with the appointment of war service committees representing the various sections of the knit goods trade, it was decided to communicate with the chairman of the general committees to find out in what way they could be of service. In discussing the interest of the sweater manufacturers in this subject, it was brought out that while the Government has purchased some sweaters for the use of the navy, none have been bought for the army, and the sweater is not recognized as part of the army equipment. Gifts of sweaters, however, are being accepted from the Red Cross.

Secretary Carter presented the subject of making all shipments f. o. b. the mill, explaining that a referendum vote on the proposition, taken by the association several months ago, had brought out a large majority in favor of the idea, which is to be put into effect generally January 1. The sentiment is also against making freight or cartage allowances.

There seemed to be considerable difference of opinion on this subject, some of the leading members, including President Withers, expressing themselves as unfavorable to joint action on this question. They thought it was one which each individual should deal with on his own behalf. However, the secretary made a distinction between selling f. o. b. the mill and prepaying, pointing out that even when

Circular Rib Knitting Machinery



PRODUCTS

Underwear, Sweaters, Cuffs with Cut Welt, Selvage, or French Welt, Mantles, Collarettes, Toques, Golf Caps, Hosiery Tops, Skirts, Borders, Corset Covers, Button Stays, Mittens, Bandages.

FEATURES

Rectangular Slots, Hardened at Bottom, Sectional Caps and Cam Rings, Hardened and Ground surfaces, Sensitive Take-Ups, Two Speed Drive, Dogless Attachment, Positive Pattern Mechanism, Needle Guard and Protector, Automatic Stop Motions, Electric Cloth Cutters.

Characteristics

The characteristics of a knitting machine, like those of an individual, are determined by its origin and history; just as knowledge of the individual's family, schooling, and early life are desirable for the formation of an idea of his characteristics, so knowledge of the plant, personnel and ideals involved in the construction of the knitting machine are necessary for an understanding of its merits. Investigate the origin of our knitting machinery.

Wildman Mfg. Co.

ESTABLISHED 1889 **NORRISTOWN, PENN.**

the freight is prepaid the shipment can be f. o. b. shipping point, thus relieving the shipper of liability and putting it up to the buyer to make claims and collect damages from the carrier.

Mr. Galbraith, in discussing the matter, said that freight allowances are a competitive measure, enabling a mill to equalize the cost of transportation, and to compete in markets where it would otherwise be at a disadvantage.

Mr. Plowman, speaking for the yarn interests, said that the tendency in that trade is going to be to ship f. o. b. the mill, because recent experience had shown the possibility of large losses being absorbed as a result of the rising market, which involves replacement at a higher cost if the shipment is lost in transit.

In stating his position, President Withers said:

"I have always considered that the seller is bound to do what he should to take care of the wants of his customer, from whom he is getting his money. Thus I expect the yarn man, who gets my dollars, to look after claims if yarn is lost in transit, and on the other hand I expect to serve my customer in the same way. The matter of prepaying freight, in my opinion, is something for each manufacturer to settle for himself."

The needle situation, which has been giving a lot of trouble to many of the knitters, was gone into briefly, Mr. Galbraith reporting that though it has been considered something of a joke, the scarcity of needles has now lost some of its humorous features for his company, which found it necessary recently to wire the War Department to assist in getting relief, so that needles might be obtained to enable Government work to be produced. The shortage appears to be principally on 36-gauge and finer needles.

Mr. Gunning, of the Hemphill Mfg. Company, said that he did not have any needles to offer, and didn't know that he would have any.

Fred W. Smith said that as a result of the shortage being put before the needle manufacturers, who had thought that the demand was being supplied, greater efforts would be made by them to produce an increased quantity of needles.

Mr. Carter reported having investigated the possibilities of obtaining needles from Canadian sources, and said that requirements as to coarser needles than 36-gauge could be taken care of in that way.

The matter of coal shortage was also discussed, and it appeared that many manufacturers were having difficulty getting a sufficient supply. In one case $9.25 a ton, delivered, was being paid for bituminous steam coal. An increase of several hundred per cent had been experienced by all of those who reported the matter of coal.

Mr. Reynolds, who was asked by the chair to discuss the cotton situation, said that the yarn mills which he represents are not sold far ahead, and that plenty of yarn for delivery after July 1 is available. The manufacturers, owing to the uncertainty of conditions, are discouraging large orders, and prefer to take small orders for shipment in the next few months.

Mr. Tyrrell raised the question of the possibility of Government control of raw cotton and raw wool. Personally, he said, he would like to see some sort of control, believing that the shortage of wool is largely due to hoarding, and the high price of cotton to manipulation. If these commodities were taken over by the Government and sold under a licensing system, it would stabilize the market. The manufacturers are interested principally in a stable market, and fixing a price would accomplish this.

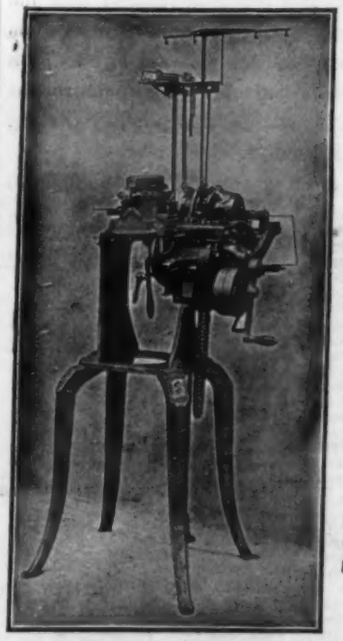
Some of those who discussed this idea thought that one way to accomplish the result would be to tax transactions involving speculative purchases, but it was objected, on the other hand, that this would make it easier to control the market by discouraging active trading and possibly causing the closing of the Cotton Exchange.

Those present at the meeting included the following:

W. A. Hedden, New Albany, Ind., Hosiery Mills.
A. S. Farnam, Starr Knitting Company, LaCrosse, Wis.
C. N. Harrington, LaCrosse, Wis., Knitting Works
D. A. Wolsey, Clare Knitting Mills, Saginaw, Mich.
Chas. A. Stern, Catlin & Co., Chicago.
M. Rubens, Rubens & Marble, Chicago.
Fred Friedlander, C. M. Plowman & Co., Chicago.
William G. Wright, Boston.
F. M. Hanson, Everwear Hosiery Company.
R. J. Mathewson, Aberfoyle Mfg. Company, Philadelphia.
George C. C. Stout, James E. Mitchell Company, Philadelphia.
William H. Thatcher, Philadelphia.
R. T. Johnson, J. H. Lane & Co., Chicago
W. H. Vanoster, Fay Stocking Company, Elyria, O.
C. M. Puhlman, J. H. Lane & Co., Chicago
G. H. Curtis, Black Cat Textiles Company, Kenosha, Wis.
W. A. Alexander, Earnshaw Knitting Company, Chicago
H. T. Robbins, Des Moines, Ia., Hosiery Mills.
A. M. Qua, A. E. Clarke, Swiss-American Knitting Mills, Grand Rapids, Mich.
C. A. Schattenberg, Good Hosiery Mills, Milwaukee, Wis.
R. R. Wilkinson, Exmoor Knitting Mills, Chicago
Stanley Woodworth, Exmoor Knitting Mills, Chicago
G. D. Crain, Jr., Cotton, Atlanta.
Raymond H. Styles, G. S. Lines & Co., New York
Charles M. Howell, Waltham, Mass.
Robert Smith, Smith Drum Co., Philadelphia
P. S. Withers, Illinois Knitting Company, Mt. Vernon, Ill.
F. W. Kingsley, Hampton Co., Chicago
D. B. Baker, Better Sox Knitting Mills, Ft. Atkinson, Wis.
William C. Reynolds, Frederick E. Freeman and Peter Turner, Harding, Tilton & Co., Boston, Mass.
F. W. Dawson, Wilcox & Gibbs S. M. Co., Chicago
E. S. Fredendall, G. J. Webb & Co., Philadelphia
E. J. Reynolds, Gastonia Cotton Yarn Co., Chicago
Richard B. Lewis, C. E. Riley Co., Boston
E. M. Gunning, Hemphill Mfg. Company, Pawtucket, R. I.
H. A. Ritter, J. P. McCarthy, American Laundry Machinery Co., Chicago
Fred W. Smith, Scott & Williams, New York
Lester H. Walters, Chicago White Lead & Oil Co., Chicago
D. C. Galbraith, World's Star Knitting Campany, Bay City, Mich.
Thomas S. Tuley, Louisville Cotton Mills Co., Louisville, Ky.
Henry Pope, Paramount Knitting Company, Chicago
C. B. Carter, secretary, Philadelphia
F. R. Page, Johnson Mfg. Company, Philadelphia
J. T. Miller, Schell, Longstreth & Co., Albany, N. Y.
H. W. Mendenhall, Black Cat Textiles Co.
Roger U. Kimball, Black Cat Textiles Co.
N. F. Thompson, Jr., Burson Knitting Co., Rockford, Ill.
R. E. Robbins, Des Moines, Ia., Hosiery Mills.
C. M. Plowman, Plowman & Co., Philadelphia
J. C. Buddhue, Chicago
A. S. Ruhe, Nelson Knitting Co., Rockford, Ill.
W. J. Benn, Textile World Journal, Chicago
W. J. Harris, Adrian, Mich., Knitting Co.
E. A. Clements, G. C. Good, Globe Knitting Works, Grand Rapids, Mich.
L. J. Lewis, Jr., Adrain Knitting Co., Adrain, Mich.
J. Ogden Wells, Cooper, Wells & Co., St. Joseph, Mich.
W. B. Tyrell, Bradley Knitting Co., Delavan, Wis.
Arthur D. Winslow, Automatic Button Co., Muscatine, Ia.
George Frederick Robb and J. G. Robb, Badger Hosiery Mills, LaCrosse, Wis.

Dockham's Clothing Manufacture and Cutting Up Trade Report and Directory has just been issued and as usual contains a very complete list of manufacturers of clothing, awnings and similar materials, boots and shoes, gloves and mittens, hats and caps, mattresses, rubber goods, trunks and bags, and many other special items that would naturally come into a directory of this character. It contains a list of jobbers, converters of cotton goods, department stores, and lists those who have New York offices. The manufacturing information contained gives the name of the company, the kind of goods made, the number of sewing machines, the power used, post office address and the location of the plant and its branches. This directory is published by the Dockham Publishing Company, 6 Beacon Street, Boston, Mass.

BOSS FULL AUTOMATIC KNITTER



It will make the neatest, most uniform and most perfect work, and is the most profitable of any knitter on the market.

It has the simplest Automatic Splicer in the world and never causes trouble. All parts are interchangeable. Compact and strongly built. Runs easily and breaks very few needles, seldom if ever requiring repairs.

So simple that an unskilled operator can learn to run it in a day.

The Boss Knitter means more production for the money than any other machine. Investigate.

Send for Particulars

BOSS KNITTING MACHINE WORKS

Cor. Elm and Reed Sts READING, PA.

—MERROWING—

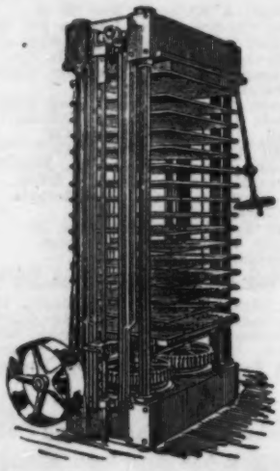
Makers of

THE MERROW

HIGH SPEED

OVERSEAMING,
OVEREDGING and
SHELL STITCH MACHINES
FOR FINISHING ALL KINDS
KNITTED AND WOVEN FABRICS
Send for Catalog and Samples.

THE MERROW MACHINE COMPANY
HARTFORD, CONN., U. S. A.



RELIANCE

Hot Plate Screw Press
FOR
Hosiery and Underwear

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Reliance Machine Works
FRANKFORD, PHILA.

Adrian Mfg. Company

Mount Holly, N. C.

Spinners of
High Grade Combed Yarns
50s and 80s

BRAND NEW MILL WITH
MODERN EQUIPMENT

When You Want the Best Yarns
Communicate With Us.

The Knit Goods Market

Outwardly the hosiery market at the close of the year just ushered into the past was as quiet as in mid-summer. But under the surface there was a strong current of stability. Even though sales were few and in small volume, inquirers found prices slowly advancing to a basis of actual value, a forerunner of activity by the latter end of January. By that time buyers will have returned for the post-holiday visit to fill in for next fall and place duplicate orders for spring.

In contrast with the quiet in hosiery was the keen interest in underwear and sweaters. Both lines opened late and had a short, snappy selling season, in which many mills sold up to capacity for 1918. Cotton union suits and drawers going to the jobber at and around $6 a dozen for separate garments have advanced 25 to 50 cents over the opening, and a number of mills have withdrawn their lines.

Buyers in the main took as many dozens as a year ago, notwithstanding the almost criminally high prices forced on manufacturers by higher operating costs and the ascendency of yarns. A specimen radical advance is shown in a line of ribbed shirts and drawers which sold normally at $1.92½ a dozen and is selling now at $5.25. In November, 1916, buyers raised the cry that the consumer would not stand for the high prices which the distributors then paid with much reluctance. The buyers were wrong. Not only is business going along "as usual" measured in dozens, but there is a strong leaning toward the better grades at prices higher than ever before were heard.

Heavy buying of cotton underwear undoubtedly was forced, to a great extent, by the almost absolute certainty of an acute shortage of woolens and worsteds for next year and the belief that the government will fix a minimum price on cotton — a price sufficiently high to encourage intensive fertilization and the planting of the largest possible acreage. With three short crops in succession, the fear of a fourth has been crowding the market with buyers.

Already there are indications of a scarcity of heavy cotton underwear as the retail selling season for 1918 approaches. This is predicated on the heavy drain on mills for government work and the substitution of cotton for the scarce woolen lines. Not until the government has made known its requirements for the year, will manufacturers be able to figure production for civilian trade. It is estimated that orders for the United States and European Allied armies for 1918 already approximate 11,000,000 garments, with some of the flat wool-cotton goods yet to be contracted for. These figures are based on reports from mills on government work.

Some manufacturers are complaining that the price of $2 per garment fixed by government purchasing authorities for ribbed worsted shirts and drawers is too low to leave them a reasonable profit. So far as can be ascertained, mill executives are yielding with a show of gracefulness and none are refusing to produce their quota. Considerable government underwear has been rejected recently, because, as one manufacturer says, "it was not made right." One mill had 6800 garments rejected by the Bureau of Supplies and Accounts of the Navy on the ground that they did not conform to the samples, although, it is held by more than one mill owner, they were fully as good and in some essentials better.

As in underwear, sweaters have been strongest in the better grades. The South is reported by mill representatives and selling agents as having bought unusually heavily for next year and taking lines of much higher standards in both silk and worsteds. In sweaters, silk is crowding hard on the shetlands. The whole trend of the market points to confidence on the part of distributors that the public has adapted itself to the new high prices. The wealthy and the mechanic whose wages have been doubled and in some instances trebled in the last two or three years are the forces behind the prospective big business of 1918. The salaried class and that element of society which is dependent upon limited incomes from investment in securities, neither of which has shared fully in the war prosperity, necessarily are the last to subordinate quality to price, but these also, according to department store heads, are keeping pace with American ideals and standards, not withstanding the pinch.

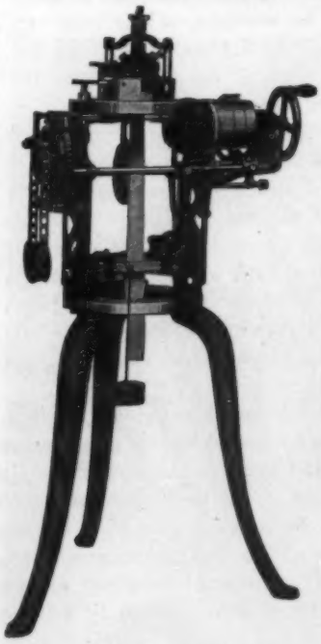
The man most affected is the one occupying a position at moderate salary in which he must keep up appearances by doing his bit socially and maintain his reputation in his church as a cheerful giver. The bank clerk on $1800 a year is in this class, and he is being hard hit. He can economize in his undergarments, as can the salaried class, without any outward show of feeling the pinch of war prices, and from this quarter eventually must be felt the effect of enforced economy.

There will be little economizing in hosiery. The tide is flowing the other way. Fine gauge goods, which have been seriously scarce for some time, will be in no greater supply, and prices undoubtedly will go higher before the retail season for next year opens. The demand for coarse gauge stockings and half hose promises to become more acute. There is much better inquiry than in the last few months for ladies' moderate price cotton hosiery. This is not due to present activity, an element which, as stated, is absent, but to the fact that stocks are becoming exhausted, with little or no low-price stuff in the hands of jobbers. Furthermore, as business in this line has been very light it is assumed considerable remains to be bought, and replacement values are increasing from week to week.

Manufacturers of 144 and 176 needle half hose should be getting substantial advances shortly. Several New York commission houses have been trying through a Philadelphia agency to obtain from 5,000 to 10,000 dozens of 144, either sewed or looped toe. An agent recently made a flat offer of $1.25 a dozen for 144 looped toe and failed to find the goods. At least one mill was quoting $1.30 at the time—five cents less for sewed toe. Boys' and misses' goods going to jobbers now at $2 are expected in some quarters to advance to at least $2.25 early in January. The scarcity of these lines and the knowledge of an increased demand the moment buyers get back is the basis of this prediction. If there shall be advances in labor and yarns, prices are almost certain to go above the figure mentioned.

A gauze half hose sold at $1.80 for January to March deliveries and advanced to $1.85 on December 5, has been priced $1.90 for April to June, and there is a likelihood that it will go to $2. It has been figured out quite accurately that the difference in cost of labor alone has been 6¾ cents a dozen more than appeared in the original cost finding. A combed peeler 220 needle sock that has been selling at $2 has been moved up to $2.25, although a similar line is selling at and slightly below $2. Here again a revis-

H. BRINTON CO.



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with the very latest attachments

Full Automatic Hosiery Footers

Body Machines Sleevers, Etc.
for Underwear, Sweaters, Toques, etc.

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Circular Rib Knitting Machinery

Write for Catalog

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Eastern Office:—320 Broadway, New York City.

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Chattanooga, Tennessee

Bands, Labels and Rider Tickets

for

Hosiery and Knit Goods

"The South's Only Exclusive Makers of Bands, Labels, Rider Tickets, Box Tops, etc., for the Knit Goods Trade."

GENERAL MACHINE WORKS

YORK, PA.

Manufacturers of

Circular Rib Knitting Machinery

Cylinders and Dials

JOSEPH T. PEARSON & SONS CO.

MANUFACTURERS OF

BONE DRY HOSIERY FINISHING BOARDS

THAT WORK ABSOLUTELY SMOOTH

PROMPT SERVICE—RIGHT PRICES
1815 E. Boston Avenue, Philadelphia

ion of the cost sheets shows that labor costs had been reckoned too low.

A manufacturer of boys' 3-pound cotton ribbed has increased the rise and fall to 7½ cents from five, as a means for forcing the sale of more of the small sizes. The mill figures that 9's cost 35 cents a dozen more than 8's. A similar change in rise and fall has been made on a line of misses ribs selling recently at $1.30, but moved up to $1.50.

A southern mill is advertising for 176 needle half hose, either sewed or looped. Other evidence of demand is the eagerness of good reputable selling agents to acquire accounts of desirable mills. It was circumstances of this character that kept prices steady in the dull market of the period of transition from 1917 to 1918. One explanation for the absence of movement was the fact that many mills had nothing to offer, being inclined to buy rather than sell.

Some interesting price movements are noted. A line of misses' hosiery selling down to 67½ cents in December, 1915, is being taken at $1.40 to $1.50. A present low price of one line of 200 needle half hose is $1.50, this line selling two years ago at 85 cents, while a full-mercerized sold in December, 1915, at $1.25 is a good seller now at $2.25.

More striking jumps are shown in cotton underwear. Ribbed shirts and drawers at $3.62½, two years ago sold on January 1 at $1.50 regular. A former $6 line of union suits is $14. The 56 cents a dozen ladies' vest of two years ago has moved up to $1.12½, and cheap balbriggan shirts and drawers from $1.65 to $4.

The highest prices ever recorded are being asked for wool half hose. A few mills in the Central West have taken business for fall as far as they dare go. Bundle socks show a jump from $1.90 normally to $4.75, and a buyer says he was quoted $6.50 for a line that formerly was in the 25-cent retail class.

The customers of one mill are calling for four times the mill's capacity. Another sold as customers came in, without the formality of an opening.

The treasurer of a western mill making wool socks is authority for the statement that his mill has had an intimation from government purchasing authorities that it might be well to make no commitments for deliveries to merchants.

One large mill has issued a letter to its customers in which it is emphatically denied that it is selling to the government out of civilian stocks, and samples of what the Army is getting are shown in the New York office. The former cashmere rib tops now are hem tops, and the very heavy weight types have the open tops. Raw material purchased months ago for civilian goods for next fall is being held until government orders shall have been completed—very late in the year.

Behind every business that keeps up with the times is an individual who keeps ahead of them.—*The Business Builder.*

The Stafford Company at Readville, Mass. are sending to their customers and friends a new calendar pad for 1918 to be applied to the "Ideal" automatic loom desk calendar which they sent out two years ago. They also advise that should another calendar stand be available they will take pleasure in sending one on request.

Among the Knitting Mills.

The Taylorsville Cotton Mills at Taylorsville, N. C., have been purchased by A. A. Adams. This is a knitting mill equipped with thirty knitting machines and eight loopers. A. L. Adams will be in charge as manager.

he Highway Knitting Mill at Icard, N. C., has been bought entire by W. Y. Frazier, formerly treasurer of the plant. It is reported that he has bought the interest of D. B. Mull, the president and is now the chief owner. The mill is to be run under the same name, it is understood, and it is stated that the product will be half hose.

The Standard Knitting Mills of Gastonia, N. C., which were recently organized by A. B. Cook, has been sold to W. H. Adams, G. R. Spender and M. A. Turner. It is stated that Mr. Cook has ordered equipment for another hosiery mill which will be located somewhere in Gaston County and in which he will manufacture ladies' hosiery.

H. D. Wilson, Shelby, N. C., will establish a knitting mill. He has awarded contract to Cicero Lutz for constructing a 30x25-foot building, and has ordered the knitting machinery.

Organization has been effected by the Collettsville (N. C.) Hosiery Mill, recently incorporated with $100,000 capital. A 50x30-foot mill building with 20 by 12 foot engine room will be erected and equipped with 40 knitting machines, the daily capacity to be 200 dozen pairs of hosiery. J. L. Garrou is president and I. G. Green is secretary-treasurer.

W. P. Leister, Forest City, N. C., plans the organization of a $20,000 company to build a knitting mill.

The Knoxville Knitting Mills Co., manufacturers of men's seamless cotton hose, have petitioned to extend their factory 110 feet on the north side, and have asked that the city either sell or give a long term lease on adjacent property. The mill now has an equipment of 450 latch needle knitting machines and 8 sewing machines.

The four-story building, which was purchased by the Surry Hosiery Mills at Mount Airy, N. C., as a location for their new mill, is now being fitted up with 50 knitting machines and will be ready for operations in the near future. The company has a capital stock of $200,000, of which $25,000 has been paid in.

R. E. Carpenter and B. A. Baber, of Shelby, N. C., and Miles Carpenter, of Gastonia, N. C., will establish a hosiery knitting mill at Shelby. They have purchased the first installation of machinery, and the daily output will be 60 dozen pairs of half-hose.

R. D. Marshall, Seviersville, Tenn., is interested in a plan for the erection of a knit goods mill.

A deal was consummated recently whereby J. O. Bell, secretary and manager of the Green River Manufacturing Co., becomes part owner of the Freeze-Bacon Hosiery Mill of Hendersonville, N. C., Mr. Bell having purchased Mr. Bacon's interest in the mill. Full details of the deal have not been made public, but it has been stated by those interested that a considerable increase is to be made in both the size of the factory and the daily output of the plant. It is not known whether or not it is Mr. Bell's intention to move to Hendersonville, but from the fact that he purchased the Rhett property on Main street, adjoining the Carolina terrace, some weeks ago, it is inferred that he contemplates making his home there instead of at Tuxedo, where he has resided for a number of years.

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Philadelphia, Pa.

SPINDLE TAPES and BANDS

The E. H. Emory Co., East Durham, N. C., has gone out of business and has been succeeded by the Crystal Hosiery Mill. C. L. Higbee, who was treasurer of the old concern, is the proprietor of the new, and M. C. Holderfield is superintendent. Men's half hose will be manufactured, as in the past, but the equipment has been increased to 36 knitting machines and 4 loopers. The product is sold direct, and the company buys 10's to 30's carded and combed yarns.

P. H. Williams, superintendent of the Elizabeth City (N. C.) Hosiery Mills, is completing arrangements for the establishment of a hosiery knitting plant which he will own. About $50,000 will be the cost of the building and equipment of machinery, the latter for a daily capacity of 400 dozen pairs of hose.

William G. Leininger, Mohnton, Pa., manufacturer of hosiery and knit goods, is planning for the immediate construction of a new two-story brick plant, about 100x100 ft. Plans for the structure are being prepared by C. J. Young, Reading. This plant was recently destroyed by fire with a loss of about $50,000.

Shutts, Robinson & Smith, Amsterdam, N. Y., have filed articles of incorporation with a capital of $20,000 to operate a plant for the manufacture of knit goods. E. Robinson, F. J. Shutts and C. Smith, Amsterdam, are the incorporators.

Thomas E. Brown & Sons, Philadelphia, Pa., manufacturers of hosiery, have acquired the large factory building at Second and Westmoreland streets, for the manufacture of hosiery. The consideration was $100,000.

The Shippensburg Hosiery Company, Shippensburg, Pa., manufacturer of hosiery, has awarded a contract for the construction of a new-one-story and basement factory building, about 40 x 160 ft., to cost $9,000, to W. R. Zern, 21 North Earl Street, Shippensburg.

The Rhode Island Cotton Yarn Company, 366 Broadway, New York, has filed notice of an increase in its capitalization from $50,000 to $100,000, to provide for expansion.

The Columbia Lace Company, South Front Street, Columbia, Pa., is planning for the complete electrification of its plant to replace the present steam motive power. The change is due to the shortage of coal in this section.

The Triangle Textile Company, Reading, Pa., recently incorporated, has acquired a factory building at a price of about $15,000, and is planning to inaugurate operations immediately for the manufacture of hosiery. G. Fred Mertz, P. Henry Fisher, and Harry E. Katzenmoyer, all of Reading, head the new company.

The Coaldale Hosiery Company, Coaldale, Pa., has had revised plans prepared for the construction of a new three-story and basement factory building of brick and steel construction, to cost about $25,000. Wayne M. High, 11 North Fifth Street, Reading, is the architect.

The Reo Knitting Mills, Front and Federal Streets, Camden, N. J., have leased the entire second floor of the large building at 103 Arch street, and will remove their entire works to this location. The company is plannnig to engage in the manufacture of fine gauge sweater coats, and will double the capacity of its plant by the installation of new equipment. Walter Maginniss is manager for the company.

Milton M. Myers, connected with Clarence L. Meyers, yarn, 880 Drexel building, Philadelphia, Pa., has enlisted in the United States Naval Reserve Force, and is anticipating an early call for active service.

C. Brown-Sailer, Tragle building, Reading, Pa., specializing in the production of misses' and boys' underwear, are planning for the early erection of a new plant to increase the present capacity.

The Fuld & Hatch Knitting Company, Cohoes, N. Y., manufacturer of underwear, has leased the Ogden Mill, one of the largest plants in this vicinity, and is planning for the immediate installation of new machinery and early operation of the works as a new spinning mill.

The Clark Thread Company, Newark, N. J., has taken over the plant of James Chadwick & Brothers, Jersey City, N. J., manufacturers of thread.

The Providence Spinning Company, Scranton, Pa., has been incorporated with a capital of $50,000 to operate a local plant. Timothy O'Connell is treasurer of the company.

J. C. Lautenbacher, operating knitting mills at Schuylkill Haven, Pa., for the manufacture of union suits, is said to have secured a large contract from the Government, and has re-opened the plant which has been idle for some time.

A New Lamp Socket.

Pass & Seymore have recently placed on the market their Shurlock porcelain socket. The advantage of the Shurlock socket is that it provides a practical means of locking the lamp in the socket so that it cannot be removed without the use of a master key.

These sockets are recommended for use over machinery, in public halls, basements, ware rooms, store houses, etc;

and for use in all plants where a high percentage of steam, moisture or humidity prevails.

P. & S. porcelain resists the chemical action of acids, fumes and gases by reason of its peculiar vitreous composition and freedom from ingredients which they will attack.

A wide variety of locking sockets and receptacles are now obtainable because their porcelain shurlock body is, of course, interchangeable with the complete line of porcelain caps and bases made by this company.

A Rubber Cushion Binder.

Herbert Emmons, manufacturer of loom binders at 58 Butler Street, Lawrence, Mass., has perfected a patented rubber cushion binder which will allow looms to be safely speeded to a maxium capacity and still continue to secure perfect weaving results it is claimed. These padded cushion binders may be used in combination with the Emmons special shuttle box front, or they may be fitted on the present binders and box backs with which a manufacturer's looms may be at present equipped.

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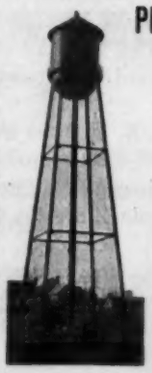

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Dyeing Knit Goods.

The process of dying knit goods differs somewhat from the method carried out in the case of woven goods owing to the difference of fabric structure in the two cases.

In dyeing woven fabrics, to ensure level results and proper penetration, the goods are invariably entered into the dyebath after an immersion in hot water at a comparatively low temperature which gradually is raised to the boil. Woven fabrics (if not previously dyed in the raw material or yarn) are dyed in the piece before being cut and made up into garments.

Knitted goods (especially with hosiery) are knitted to shape and seamed before dyeng. Moreover, in many cases, certain parts are reinforced to withstand hard wear, and hence with reinforcements and bulk caused to a certain extent by linking and seaming, the material is by no means of absolutely uniform character. Again, the reinforcing yarn is often of a different character to that of the main yarn, as, for example, cotton is often used to splice heels, toes, and soles; in the same way in seaming one or more threads used in this operation may be composed of cotton.

The problem therefore is to dye knit goods so as to ensure proper penetration of the dye liquid into the seams and reinforced parts also to dye threads of a different character to that of the main yarn, so that any slight difference in shade is not noticeable in the finished article. This, by no means, is a simple operation, and many mills often use colored cotton yarn when splicing, so as to ensure even results.

This procedure, however, does not always secure the desired effect, since much depends on the character of the dyestuffs used in dyeing these cotton yarns. If dyed with certain direct colors, they may be dyed perfectly, but when the re-dying takes place many actually lose color, owing to liability of certain colors to bleed. Some colors have a tendency to do this, and the appearance of the dyed cotton yarn used in the splicing, and the appearance of the same after the actual dyeing of the goods then presents a decided contrast. For this reason, manufacturers should insist on dyed cotton splicing threads to be guaranteed fast to bleeding.

Suppose undyed cotton yarn is used in the splicing and in the sewing or seaming operations, it is advisable to give due notice to the dyer, in order that he may modify his selection of dyestuffs, so as to produce an evenly dyed hose, or half-hose, which at the present time (on account of the scarcity of dyestuffs) is by no means a simple thing to do. The dyer then can, to the best of ability and choice of dyestuffs, add some dyestuff to the bath which will dye the cotton practically the same shade as the wool in union goods, even if it be a dyestuff that will not dye the wool at all. Moreover, he can also modify his dying operation by shutting off the steam towards the end of the operation so as to allow the cotton to take up the dyestuff, since cotton often dyes better at a low temperature.

The best general method of application when using acid dyestuffs, where cotton splicing is present, is to enter the goods in a boiling bath, with or without the dyestuff, and boil them for a few minutes, so as to get the cotton thoroughly wetted out by the penetration of the boiling liquor. If the dyestuff has not previously been added, it can then be entered in a properly dissolved form along with a certain proportion of a cotton dye and the goods boiled for from one-half to three-quarters of an hour. Shut off steam and work the cooling liquor for another twenty minutes.

In order to judge whether the cotton is thoroughly dyed, it is advisable to enter a trial swatch of cotton along with the goods and afterwards take it from the bath, dry it over some adjoining steam pipe and note the density of the color. The appearance of the cotton wet or dry are two different things, since when cotton is wet the density and the tone of the color is out of all proportion in contrast with its appearance when dry. Proper penetration of seams and reinforcement parts, even if composed of the same character of fibre, can only be obtained by absolute penetration of boiling water.

These methods of dying would seem strange in connection with the dyeing of woven goods since entering of these at the boil is considered a sure method of obtaining unlevel results. Naturally this would also occur in the dying of hosiery were it not for the fact that the dyer invariably uses colors which are easily levelling so that in case of too rapid absorption of different parts of the goods the excess color is afterward removed by the boiling, the color being boiled off the denser parts and transferred to the other parts.

Hosiery dyeing, therefore, must be considered a special branch of the dyeing industry, and dyers of woven goods, when taking up this branch, should remember that the methods of dyeing woven goods can by no means be followed in entirety in the dyeing of knit goods.—*The Dyer and Calico Printer.*

Ranges of Prices of New Bedford Stocks for Years 1917 and 1916.

COTTON MANUFACTURING.

	High.	Low.	High.	Low.
	1917		1916	
Acushnet Mills	195	118*	178	165
Beacon Mfg.	...	...	...	...
Beacon Mfg., pr.	115	100	118	113
Booth Mfg. Co., pr.	110	104½	112	104
Booth Mfg. Co.	65	50	50	40
Bristol Mfg. Co.	100	80	101	86
Butler Mill	97	90	98½	83
do pfd.	106	98	109	102½
City Mfg. Co.	132	126†	132	100
Dart Mfg. Co.	220	202†	222	188
do pfd.	97	90	102	92
Fairhaven Mills com.	100	87	...	...
Fairhaven Mills pfd.	97½	84	...	...
Gosnold Mills com.	115	100	115	105
do pfd.	99	90	98½	92
Grinnell Mfg. Co.	138	120½†	137	130
Hathaway Mfg. Co.	...	...	...	...
Holmes Mfg. Co.	265	240†	275	175
do. pfd.	123	118	122½	119
Kilburn Mill	162½	131	170	140
Manomet Mills	133	117¾	130	110
Nashawena Mills	112	99½	114	95
Neild Mfg. Co.	172	150	185	126ex
N. B. Cot. Mills Corp.	...	...	...	...
do pfd.	94	85	97½	90
New Eng. Cot. Yarn Co. com	100	35	42	23½
do. pfd.	100	60	68	50
Nonquitt Spin. Co.	132½	110	121	102
Page Mfg. Co.	95	80	100	90
Pierce Mfg. Co.	400	340†	420	380
Pierce Bros., Limited	...	...	...	...
Potomska Mills	136	130	136	130
Quissett Mills	175	145†	180ex	137½
do. pfd.	116	107½	119	113ex
Sharp Mfg. Co.	150	78*	117	100½
do. pfd.	120	99	112¼	100
Soule Mill	100	90	106¼	92
Taber Mill	134	114†	137½	120
Wamsutta Mills	116¼	105†	123	108
Whitman Mills	168	140	175ex	156

* Ex—Cash and Stock dividend.

† Ex—Extra dividend.

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